

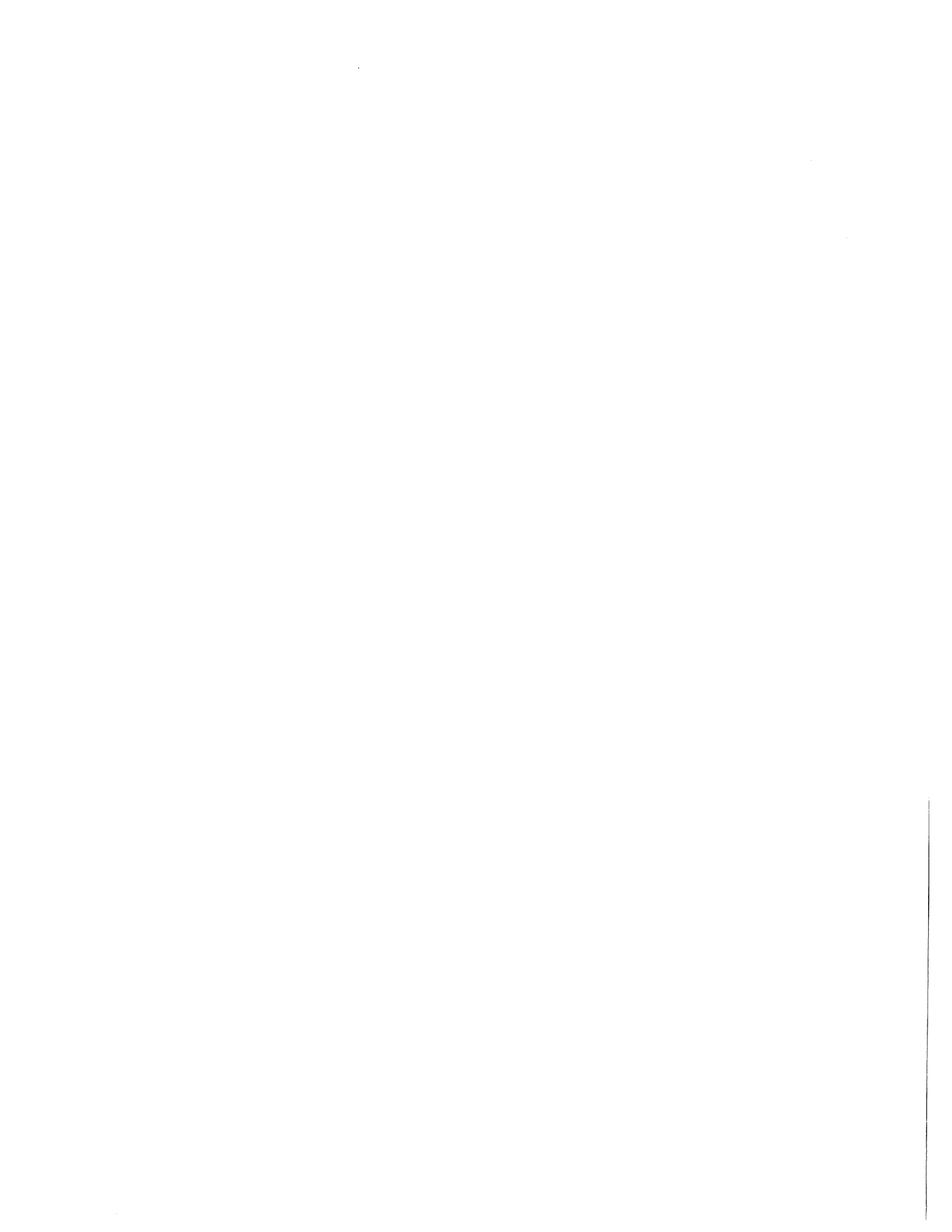
Pond Dynamics/Aquaculture Collaborative Research Data Reports

Volume Two, Number Three
Thailand Project

Cycle III of the
CRSP Global Experiment



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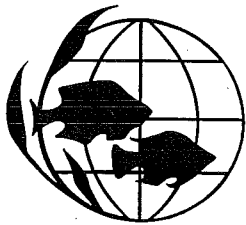


**POND DYNAMICS/AQUACULTURE
COLLABORATIVE RESEARCH
DATA REPORTS**

**Volume Two, Number Three.
Thailand: Cycle III of The Global Experiment**

March 25, 1991

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FOREWORD

The Pond Dynamics/Aquaculture Collaborative Research Support Program (PD/A CRSP) represents an international community of researchers and institutions dedicated to strengthening health and nutrition in developing countries by improving the efficiency of pond aquaculture systems. It is one of several agricultural CRSPs supported by the U.S. Agency for International Development under the authority of Title XII of the International Development and Food Assistance Act of 1975.

The "Global Experiment" in Pond Dynamics/Aquaculture is the major CRSP research activity, covering the period from 1982 to 1987. The Global Experiment was designed to quantitatively describe the physical, chemical and biological principles of pond culture systems. The information gained from the Global Experiment will be used to improve production technologies and develop quantitative production functions to facilitate rigorous economic analyses of aquaculture systems.

Standardization is a key element of the Global Experiment. Standardization permits the comparison of data from diverse geographic locations. The experimental design involves monitoring specified environmental and fish production variables in accordance with standardized work plans in twelve or more ponds at each of seven geographical locations. The variables observed, frequency of observation, and materials and methods are uniform for all locations. The field data are filed in a centralized data base, called the CRSP Central Data Base. Statistical methods will be used to test hypotheses about correlations between variables and to evaluate the sources of variance within ponds, between ponds within locations, and between locations.

The CRSP Central Data Base will be used to develop predictive models of the processes occurring in pond culture systems. The models will be used to provide guidance for ongoing and future research, to predict the performance of existing and proposed pond systems subject to specific inputs and constraints, and to improve the operation and efficiency of pond culture systems.

The Global Experiment includes three cycles of experiments. Each cycle consists of two series of observations, one during the dry season and one during the wet season. The objective of the first cycle is to create a detailed baseline of chemical, physical, and biological data on all ponds treated with a standard level of inorganic fertilizer. In the second experimental cycle, ponds treated with inorganic fertilizer are compared to ponds treated with organic fertilizer. In the third cycle, the responses of ponds to different levels of organic fertilizer are compared.

The goal of the Pond Dynamics/Aquaculture Collaborative Research Data Reports (referred to as Data Reports) is to record the CRSP Central Data Base and to present interpretations of site specific results. The Pond Dynamics/Aquaculture CRSP has conducted the Global Experiment at seven project sites in six developing countries: Thailand, Indonesia, the Philippines, Panama, Honduras, and Rwanda. The first volume of these reports provides descriptive information for each CRSP site. It presents the physical characteristics of each site, including a geographical sketch, climatology, and water and soil analyses. Experimental cycles are described in CRSP Work Plans One to Three, which are summarized in the first volume.

Volume One will serve as the reference volume for the entire report series. Subsequent volumes will focus on each site separately. Each Data Report will include one cycle (wet and dry seasons) of the Pond Dynamics/Aquaculture CRSP Global Experiment. Therefore, with few exceptions, each project site will have three Data Reports devoted to it, representing the results of the three cycles of the Global Experiment. In addition to the hard copy of experimental data published as a part of each Data Report, data are also available from the PD/A CRSP in electronic form (on diskette) for computer analysis. Cycle III of the Global Experiment in Bangsai (Ayutthaya), Thailand is presented in this volume.

INTRODUCTION

The Pond Dynamics/Aquaculture CRSP has been conducting a series of experiments in pond systems around the world since 1982. The first cycle of experiments evaluated pond dynamics under low nutrient input rates during wet and dry seasons. The second cycle of experiments evaluated pond dynamics processes under organic versus inorganic fertilization regimes during wet and dry seasons. The third cycle of CRSP experiments was designed to expand the quantitative baselines initiated during the first two cycles, and to determine the level of organic fertilization that would produce optimum fish yields. This report covers the third cycle of experiments conducted in Thailand.

MATERIALS AND METHODS

The experiments were conducted from 7 February to 7 July (dry season), and from 6 August to 29 December (wet season) 1986, in 12 ponds at Bangsai (Ayutthaya), Thailand.

Twelve 0.025 ha earthen ponds were monitored regularly to observe the physical, chemical, and biological processes listed below. The frequency of the observations varied from daily to monthly for different parameters. The specific variables measured, the methods of measurement used, and the frequency of measurement are described in Volume 1 of the *Data Reports* series (Egna et al. 1987). The variables monitored included rainfall, air temperature, wind velocity, solar radiation, water temperature, dissolved oxygen, alkalinity, total inorganic nitrogen, total phosphorus, chlorophyll *a* content, Secchi disk depth, primary productivity, fish growth, fish survival, and total fish yield. Total inorganic nitrogen was calculated as the sum of nitrite, nitrate, and ammonia concentrations.

Ponds were treated with dried chicken manure at rates of 125, 250, 500, and 1000 kg/ha/wk, with three replicates per treatment. *Oreochromis niloticus* fingerlings were stocked in the ponds at a rate of 1 fish per m³. The dry season experiment lasted 150 days, and the wet season experiment lasted 145 days.

Statistical analyses included parametric and nonparametric tests. In all cases, significant differences were assumed with alpha = 0.05. Parametric tests were usually ANOVA, and were done when data were normally distributed. Nonparametric tests were Wilcoxon sign tests. All analyses were done on the program MIDAS on the Michigan Terminal System.

RESULTS

Climatic conditions were slightly cooler and wetter in 1986 than in 1985, and much more so than in 1984. Wet season rainfall at Bangsai was 92 cm, whereas dry season rainfall was 50 cm (Figure 1). Average dry season maximum and minimum air temperatures were 35°C and 25°C, respectively; equivalent values in the wet season were 32°C and 24°C, respectively. Average solar radiation in 1986 was 28.1 Einsteins/m²/d in the dry season, and 24.0 E/m²/d in the wet season. Average wind speed was 6.4 km/h in the dry season, and 4.5 km/h in the wet season. In addition, 1986 was slightly cloudier and windier than previous years. Average weekly maximum and minimum water temperatures during the 1986 dry season were 35°C and 28°C, respectively; equivalent wet season values were 34°C and 27°C, respectively. Overall, these water temperatures were warmer than those of 1985.

The nonparametric sign test indicated no significant differences in total inorganic nitrogen related to different inputs of organic fertilizer (Figure 2), and no significant time trends were apparent. Overall, total inorganic nitrogen levels were lower than in Cycle II.

Total phosphorus levels were not significantly different between low-level fertilization treatments, i.e., with applications of 125 and 250 kg/ha/wk (sign test, Figure 3). However, under higher input levels (i.e., 500 and 1000 kg/ha/wk), significant differences in total phosphorus were observed between treatments (sign test, Figure 3). At these higher levels of fertilization, phosphorus also exhibited a positive linear trend with time.

Similar results were observed for alkalinity. At the highest level of fertilization (i.e., 1000 kg/ha/wk) alkalinity, like phosphorus, exhibited a significant positive linear trend (sign test, Figure 4). Alkalinity levels were not significantly different among other treatments, and time trends were not significant.

Dissolved oxygen concentrations in water near the pond bottom showed a small diel excursion, which was smallest during the wet season. Minimum oxygen concentrations were observed in early morning (i.e., at 0530 hours). Mean oxygen concentrations near the bottom were approximately 4.6 mg/L at dawn, with the lowest values occurring in ponds receiving the highest fertilizer inputs (Figure 5). This effect was most apparent during the dry season. Peak oxygen stratification occurred at about 1400 hours (Figure 6); and the average vertical oxygen differential (oxygen at top minus oxygen at bottom of the water column) was greater for higher fertilizer input treatments (Figure 6).

Chlorophyll *a* concentrations were not significantly different among treatments (ANOVA); but showed a significant positive linear time trend for all treatments during the wet season, and for the higher input treatments (i.e., 500 and 1000 kg/ha/wk) during the dry season (sign test, Figure 7). Primary productivity also showed no significant differences among treatments (ANOVA); it also did not show any significant time trends (sign test). As a result, primary productivity and chlorophyll *a* levels were only moderately correlated ($r^2 = 0.66$). Primary productivity and chlorophyll *a* values were highly variable among treatments, among replicates, and with time. Secchi disk depth, however, showed less variation among pond replicates, did not change with time, and showed slight qualitative differences between treatments (Figure 8).

Monthly fish growth and yield showed no significant differences related to season or fertilization (ANOVA, Figure 9). Much variation was observed in fish yields within treatments (Table 1). Survival was high during both seasons; mean survival rates were 93.3% during the dry season and 89.4% during the wet season (Table 1). Overall mean fish growth was 0.89 g/d, which is somewhat slower than the normal expected growth (about 1.0 g/d) for this fish species in Thailand.

DISCUSSION

The meteorological parameters that were monitored in 1986 indicated cooler and wetter overall conditions than were observed in 1984 or 1985. However, differences detected in these values may have been related to inherent site differences between Bangsai (Ayutthaya) and the previous CRSP experimental site in Thailand at Nong Sua.

Because Cycle II and Cycle III experiments contained a common treatment (i.e., organic fertilization at 500 kg/ha/wk), overall pond dynamics parameters could be compared qualitatively for site- or climate-related differences. Mean values measured for all chemical and biological parameters except total inorganic nitrogen appeared to be similar between Cycle II and III in ponds receiving this treatment. Total inorganic nitrogen levels were generally lower during Cycle III experiments.

No significant differences in total inorganic nitrogen concentrations were observed among treatments. This may indicate that nitrogen availability was a limiting factor for algal production in our experiments. Nitrogen appeared to remain limiting even under high input levels, which was probably due to its low concentration in the water

and its high requirement in algal cells. It appears that phosphorus, however, may have been limiting only under low levels of fertilizer input (i.e., 125 and 250 kg/ha/wk). Based on alkalinity values, dissolved inorganic carbon did not appear to be limiting in any of the ponds.

Minimum dissolved oxygen levels were expected to occur at the pond bottom. Since it was important to determine whether stress from low oxygen levels affected fish yield, pond bottom values, rather than surface values, are shown in Figure 5. The lowest recorded concentrations indicate that dissolved oxygen levels were always adequate for normal growth of *Oreochromis niloticus*, because the levels exceeded 32% saturation or approximately 2.6 mg/L. Pond surface oxygen values probably exhibited a somewhat larger diel excursion than was observed for pond bottom values.

Total algal production, based on primary productivity and chlorophyll *a* values, appeared to be only weakly affected by organic fertilizer inputs. The observed lack of significant differences was probably due to the high level of variation between replicates and with time. Secchi disk depth observations showed more consistent differences, at least qualitatively, between treatments.

Monthly fish biomass values may have had a weak relationship with fertilization rates during the wet season (Figure 8), but differences were not significant over the entire cycle. Again, the lack of significant differences may have been due to the high variability in fish yields (Table 1). Some reproduction did occur (Table 1), and this may account for at least some of the variability in yield and the lack of significant yield differences related to fertilization.

In previous experiments (Cycle II) it was observed that, in spite of similar primary production and chlorophyll *a* levels, net fish yields were higher when ponds were treated with organic fertilizer. This was thought to indicate heterotrophic feeding by the fish, as manure adds detrital matter and contributes directly to bacterial and zooplankton production. If this had occurred during Cycle III, then our experiments would have been expected to show some increase in fish yield related to organic fertilizer input levels, even if primary production did not change. This effect, however, was not observed, which may again be due to the high level of variation in fish yield among pond replicates.

LITERATURE CITED

- Egna, H.S., N. Brown, and M. Leslie. 1987. Pond Dynamics/Aquaculture Collaborative Research Data Reports, Volume One. General reference: Site descriptions, materials and methods for the global experiment. Pond Dynamics/Aquaculture Collaborative Research Support Program, Office of International Research and Development, Oregon State University, Corvallis, Oregon. 84pp.

Table 1. Summary stocking and harvest data for *Oreochromis niloticus* in the four organic fertilizer treatments during wet and dry season experiments. A = 125, B = 250, C = 500, and D = 1000 kg/ha/wk. Mean (SD).

Treatment	Stocking		Number of Days	Harvest		Survival (%)	Offspring Production (kg/ha)	Total Net Yield (kg/ha/d)	Adult Net Yield (kg/ha/d)
	N/ha	kg/ha		N/ha	kg/ha				
Dry season									
A	8800	256 (14)	150	8373 (506)	1647 (504)	95.3 (6)	332 (313)	9.3 (3.2)	7.0 (4.1)
B	8800	243 (5)	150	7893 (460)	1490 (180)	90.0 (5)	351 (182)	8.3 (1.3)	6.0 (1.1)
C	8800	243 (5)	150	8173 (281)	2085 (290)	93.0 (3)	615 (58)	12.3 (2.0)	8.2 (3.7)
D	8800	245 (9)	150	8307 (533)	2050 (850)	94.7 (6)	626 (257)	12.0 (5.7)	8.8 (7.4)
Wet season									
A	8800	206 (2)	145	8067 (528)	1271 (414)	91.3 (6)	243 (186)	7.3 (2.9)	5.7 (2.0)
B	8800	222 (5)	145	7773 (642)	1716 (56)	88.3 (7)	67 (60)	10.3 (0.4)	9.8 (0.3)
C	8800	232 (8)	145	7640 (139)	1319 (217)	86.8 (2)	541 (470)	7.5 (1.5)	4.7 (2.6)
D	8800	227 (5)	145	8013 (361)	1823 (460)	91.1 (4)	593 (509)	11.0 (3.2)	6.9 (6.7)

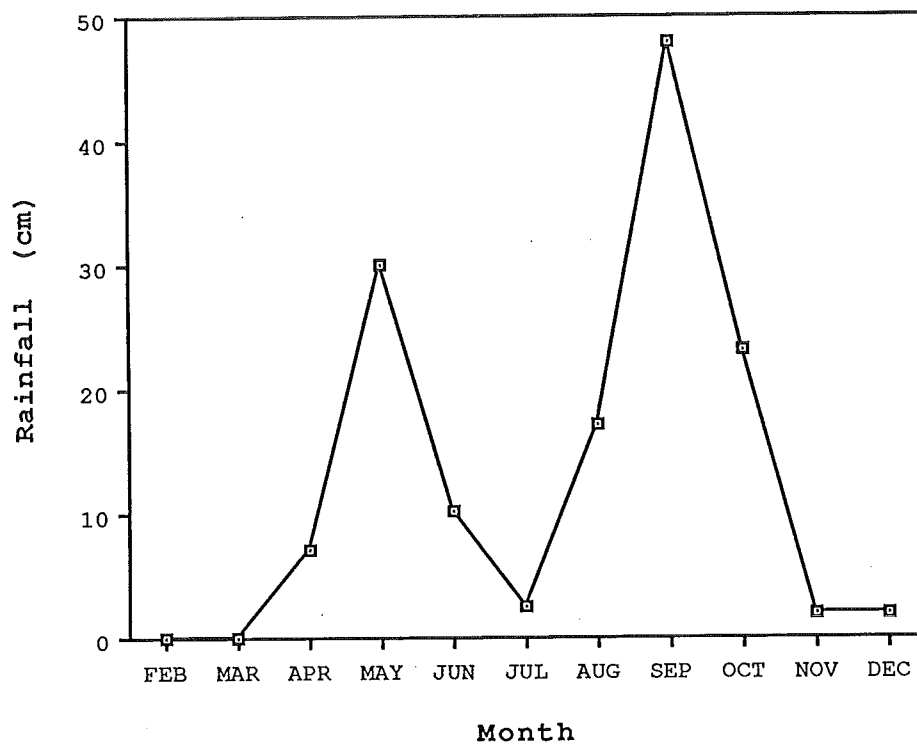


Figure 1. Total monthly rainfall for 1986 at the experimental ponds.

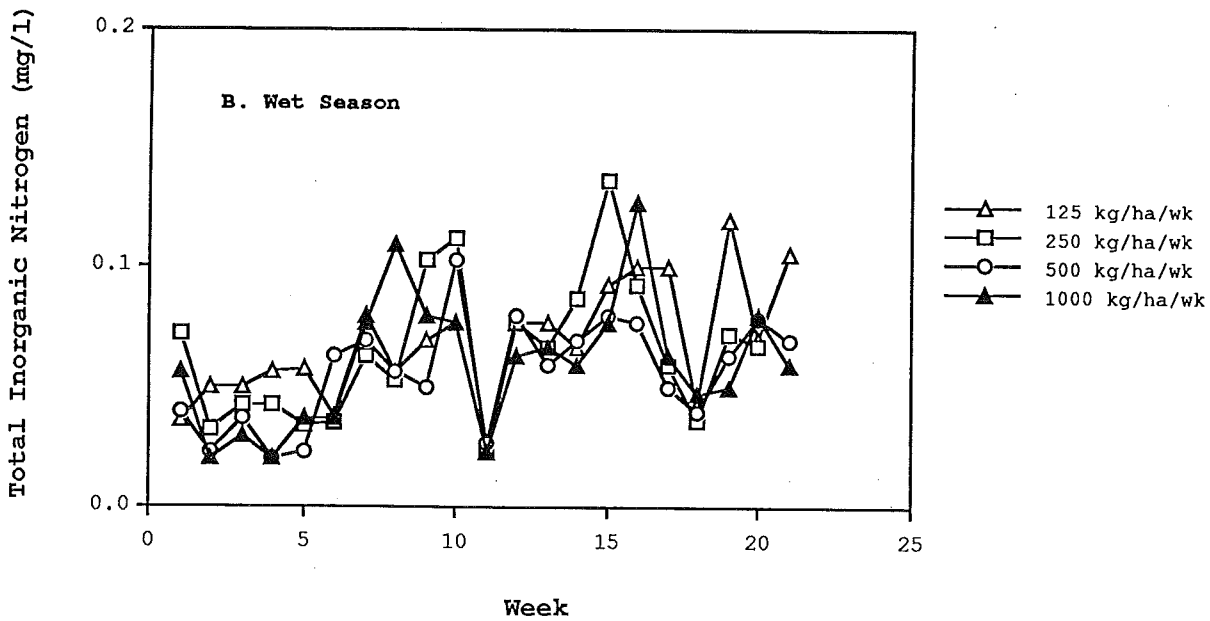
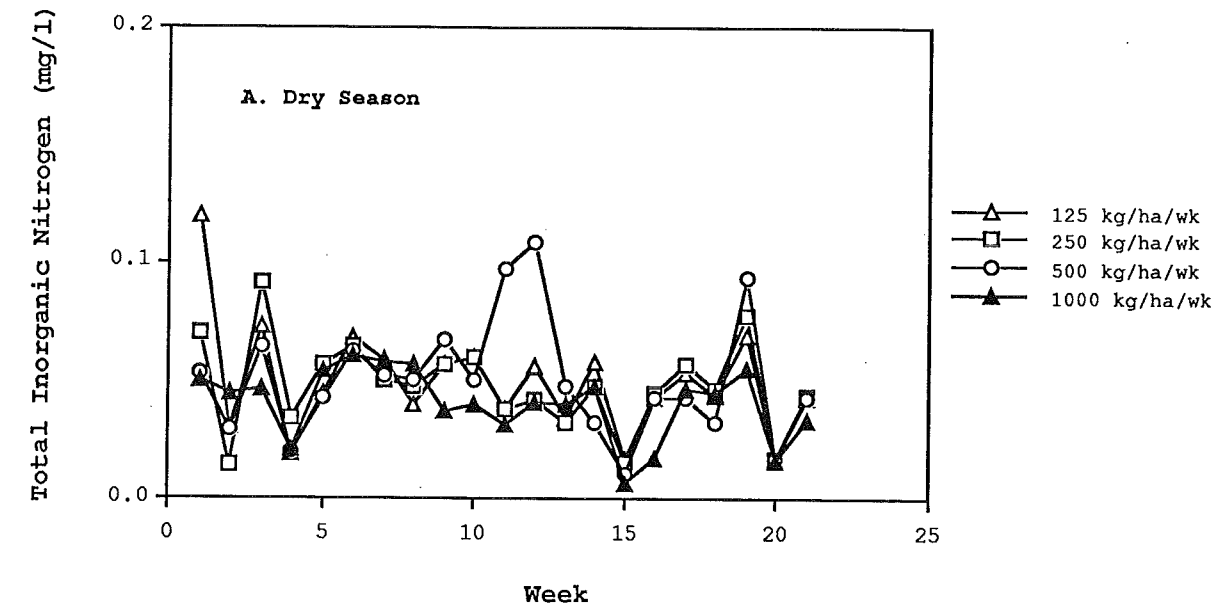


Figure 2. Trends in mean total inorganic nitrogen in the experimental ponds.

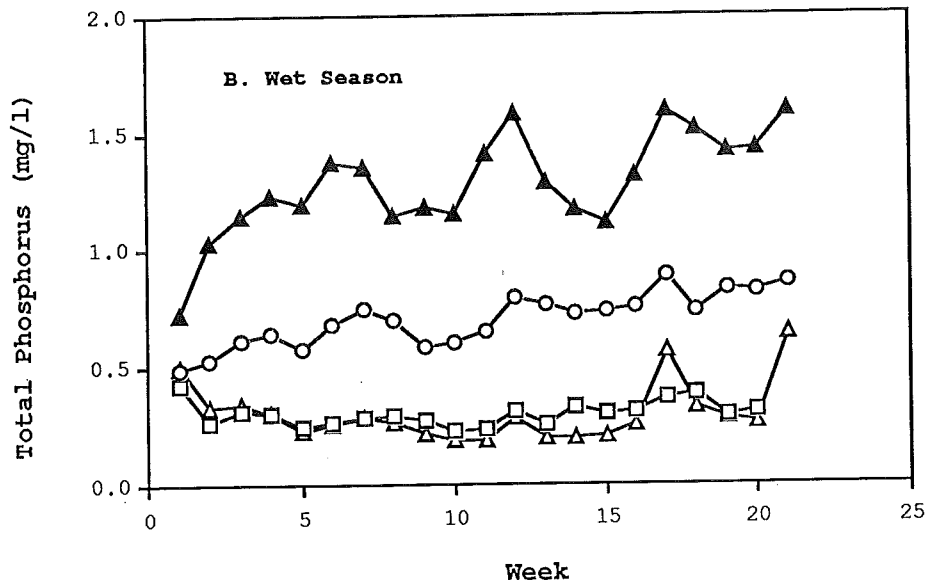
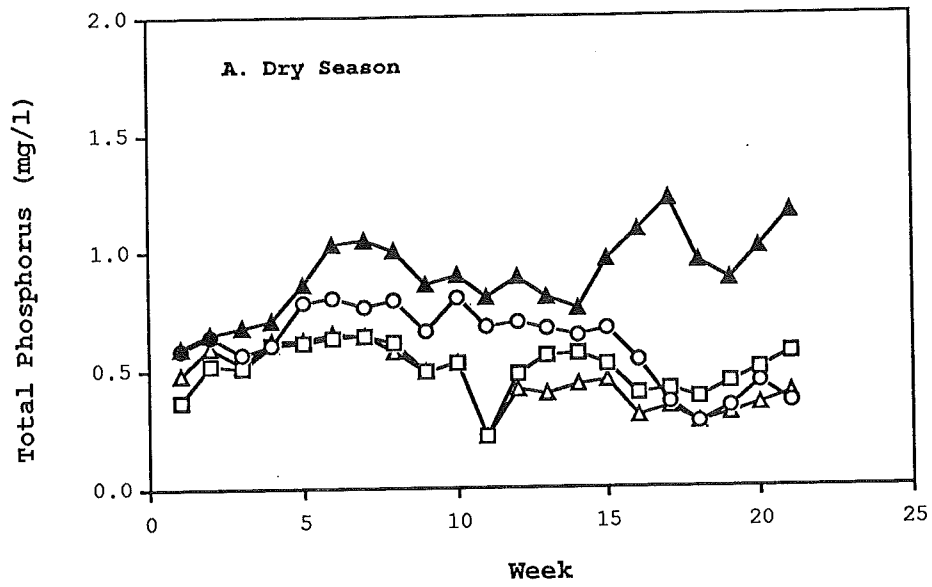


Figure 3. Mean total phosphorus trends in the experimental ponds.

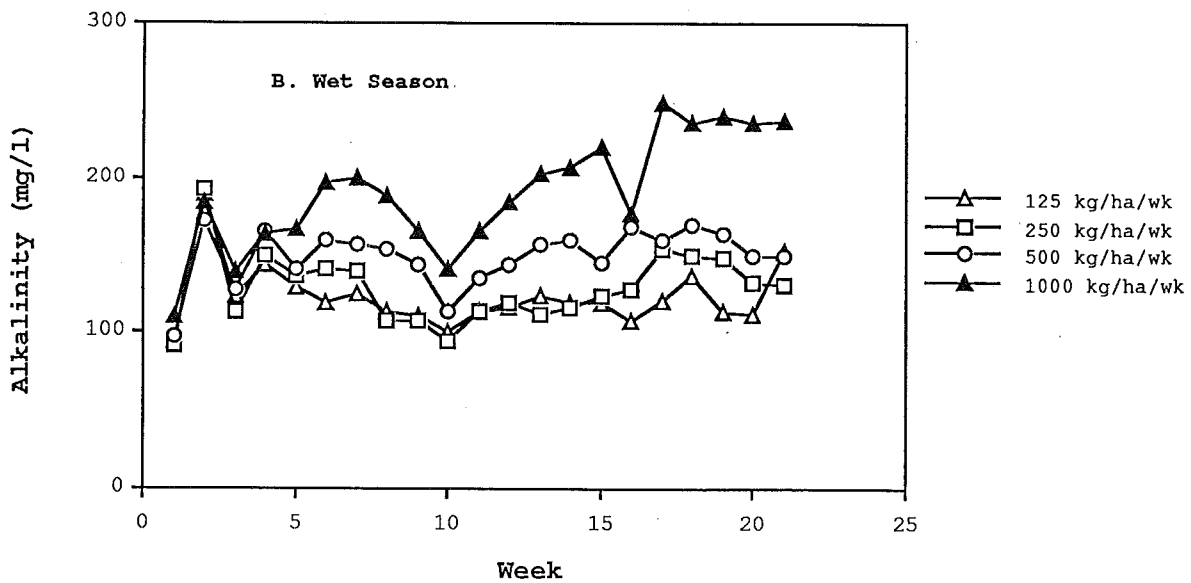
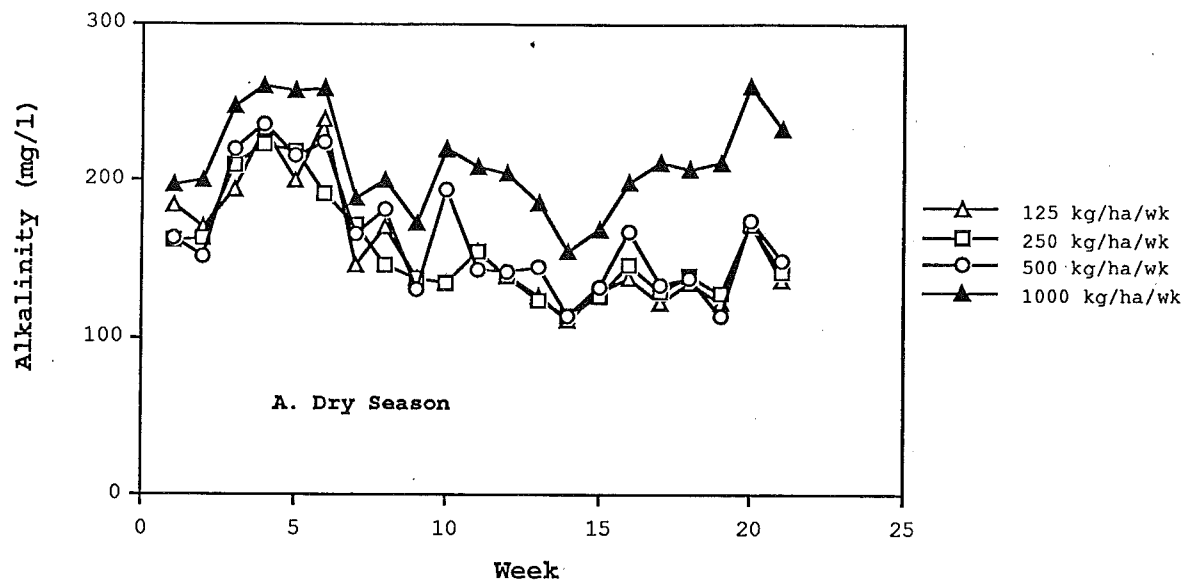


Figure 4. Mean alkalinity trends in the experimental ponds.

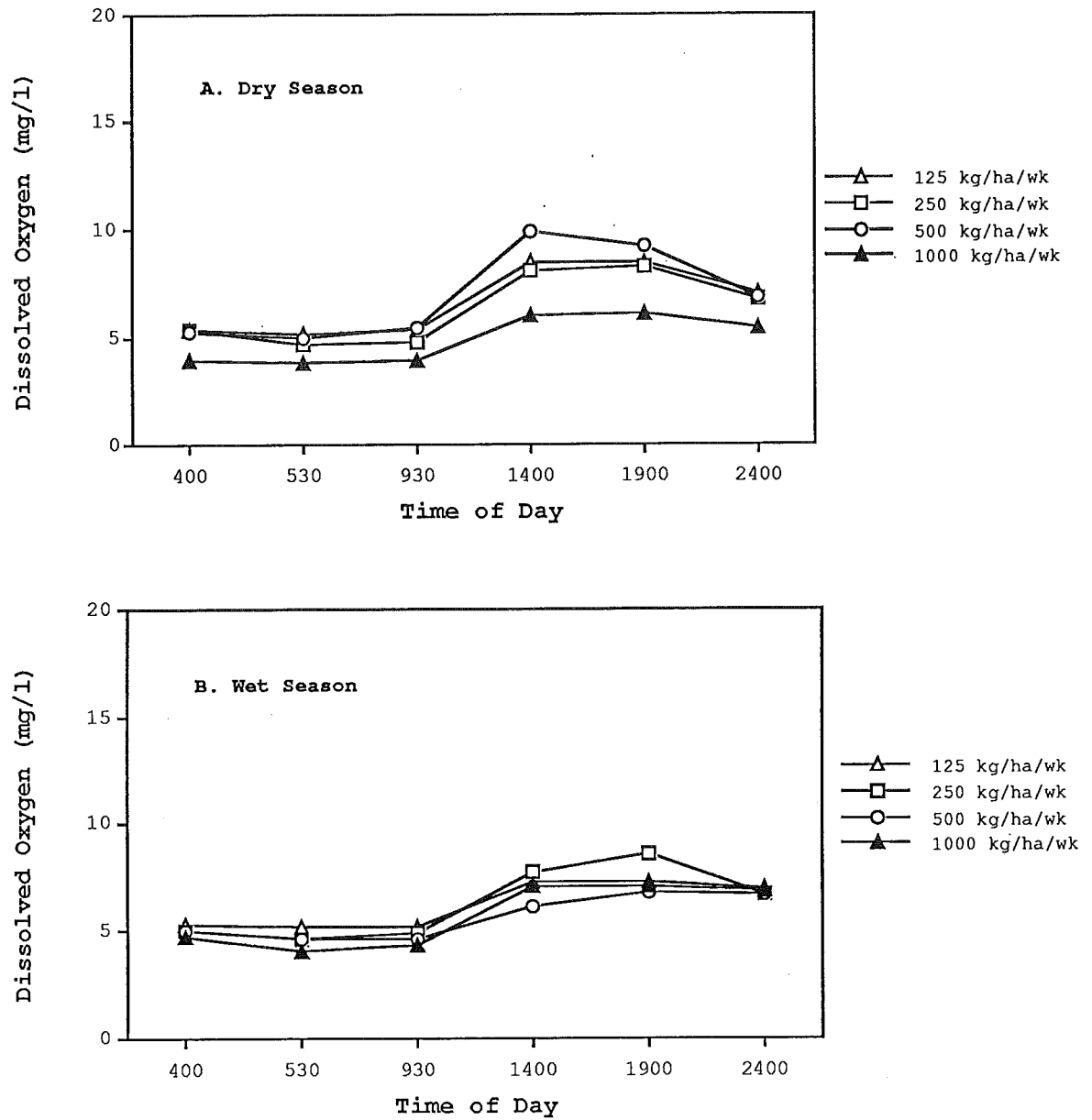


Figure 5. Diel changes in the mean of monthly bottom dissolved oxygen levels for the experimental ponds.

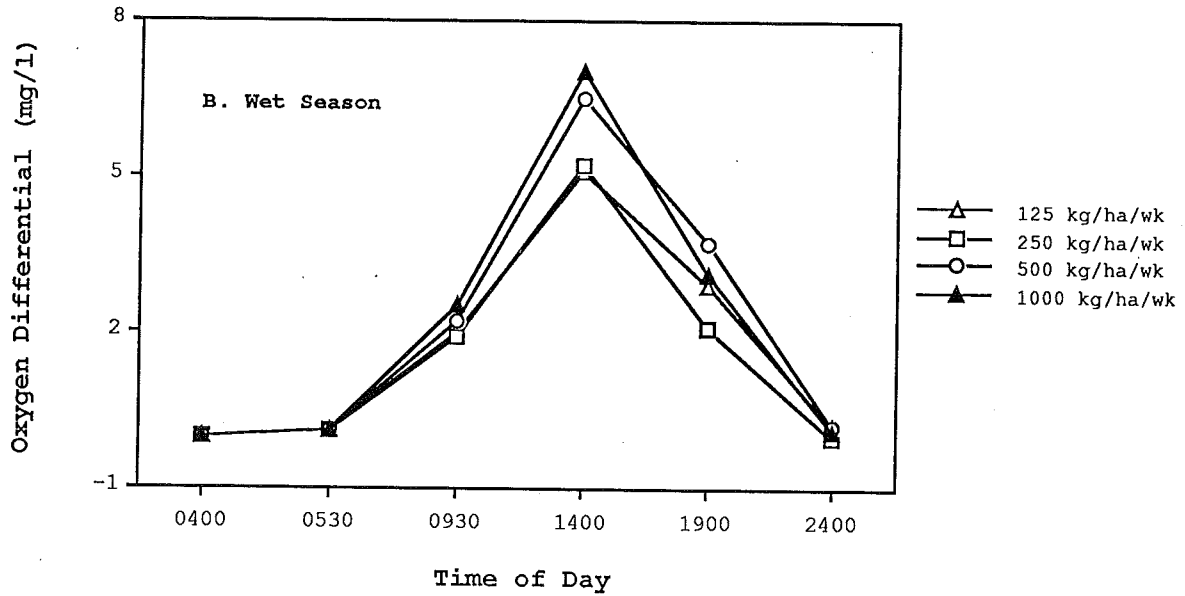
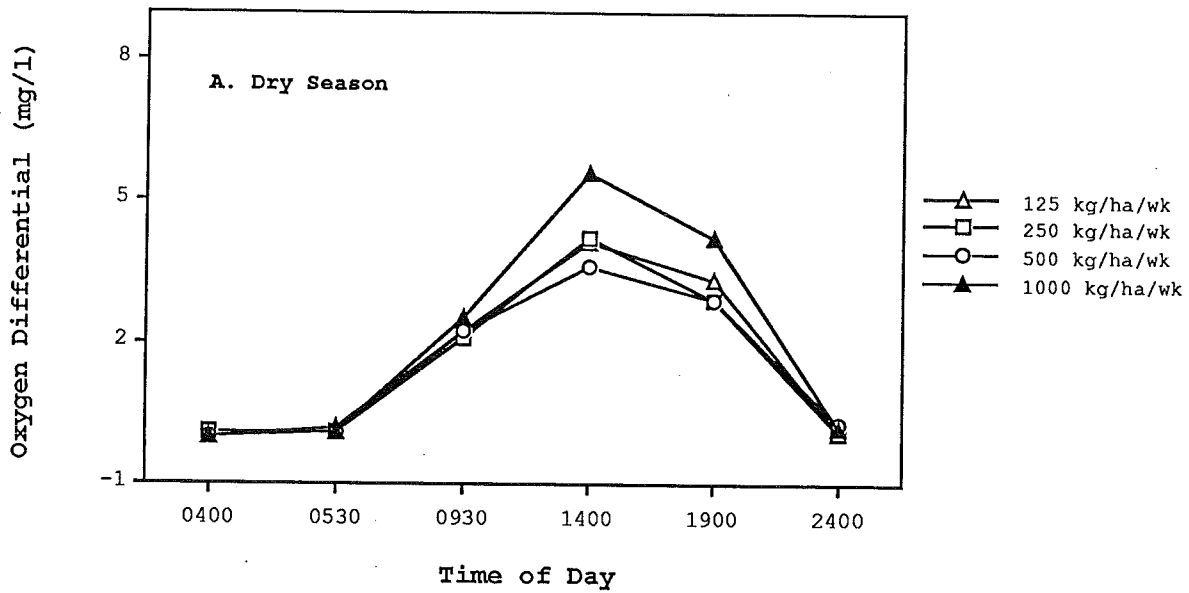


Figure 6. Diel changes in mean oxygen differential (top vs. bottom) for the experimental ponds averaged over months and ponds for a treatment.

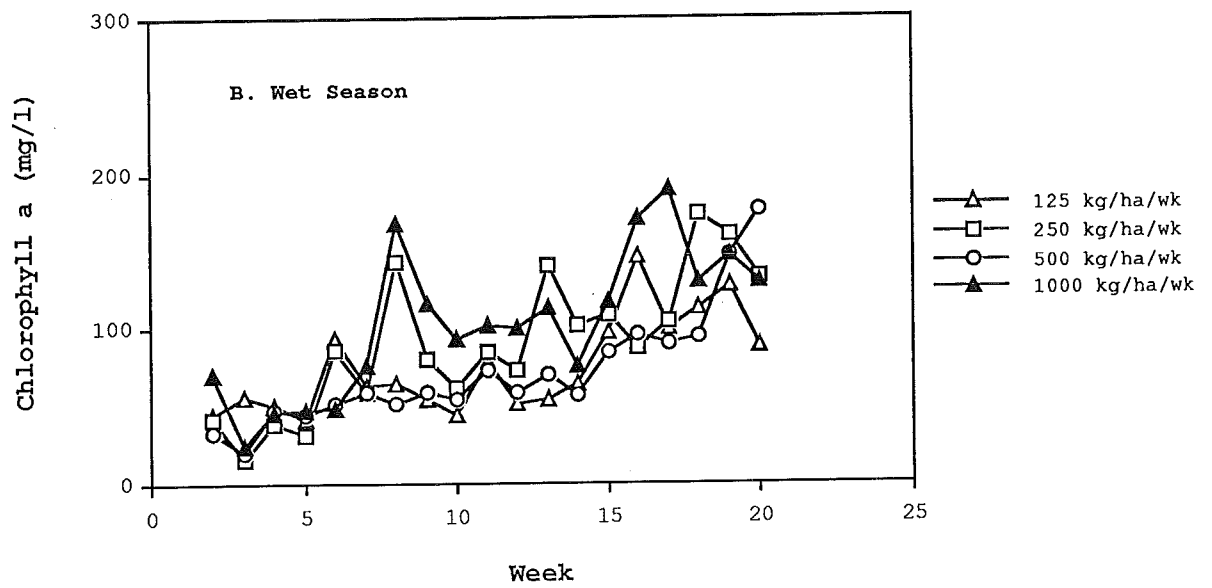
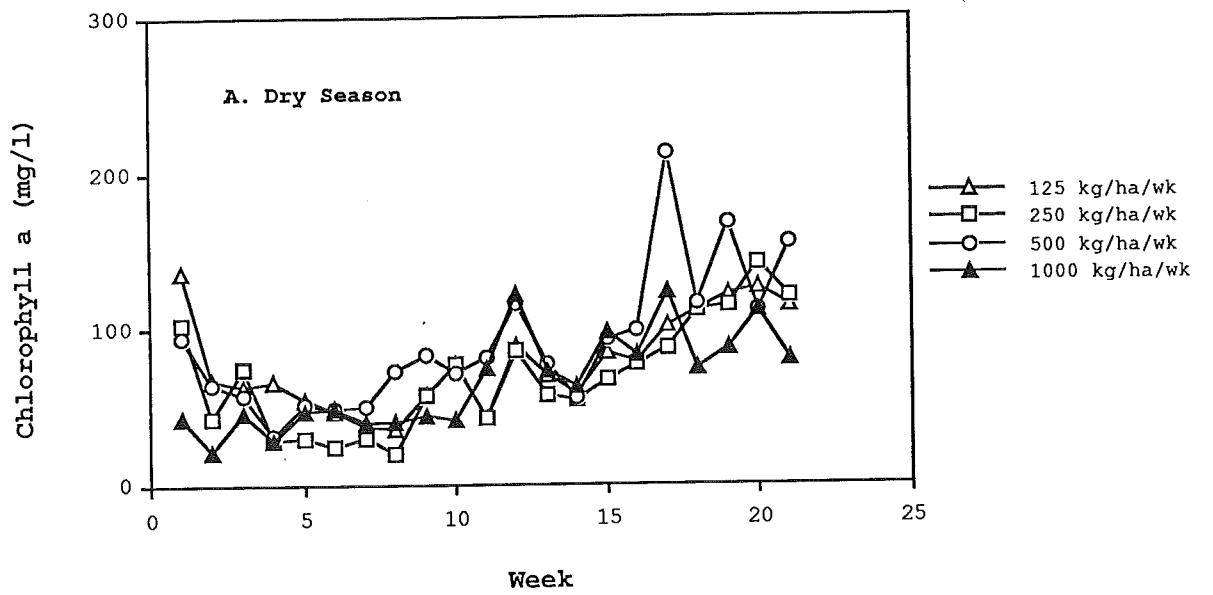


Figure 7. Mean chlorophyll a concentrations in the experimental ponds.

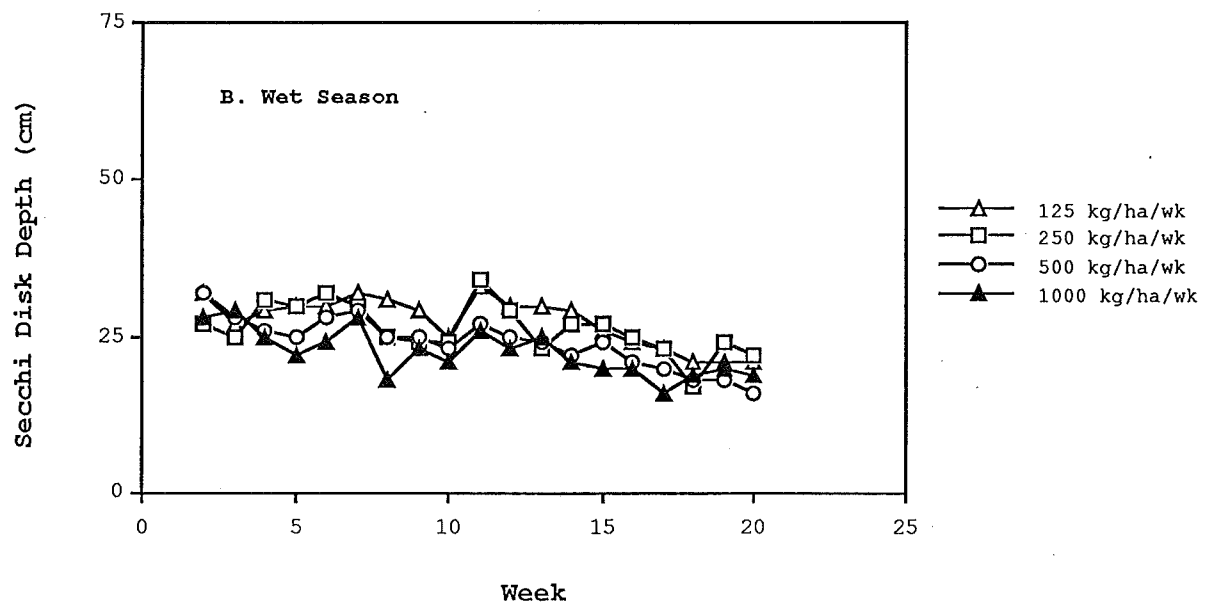
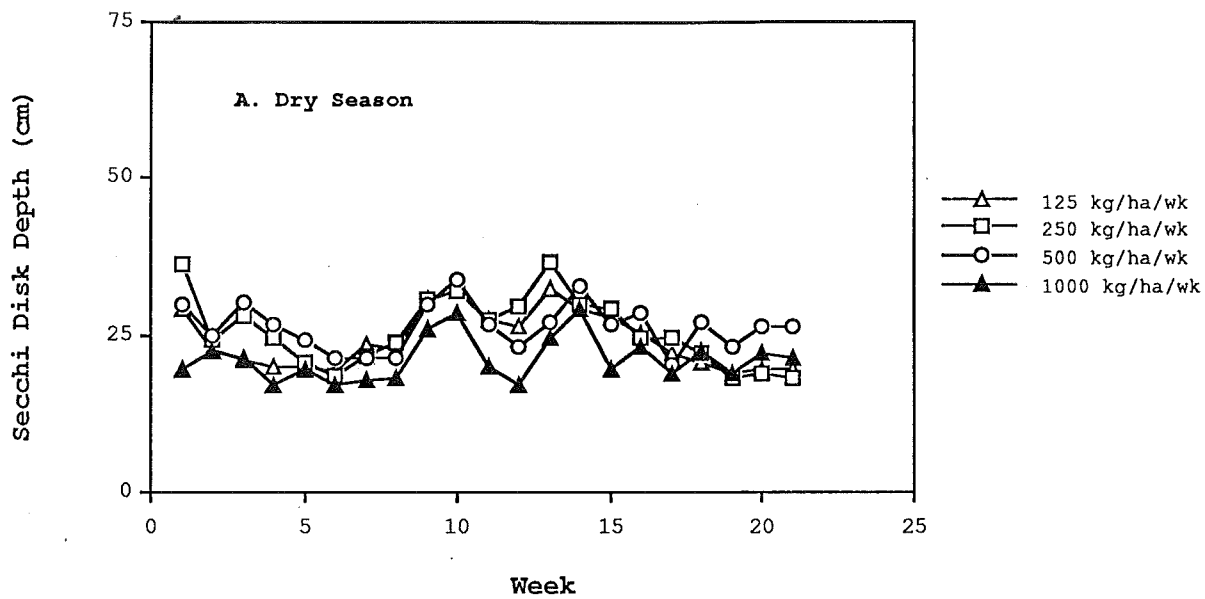


Figure 8. Mean Secchi disk depth trends in the experimental ponds.

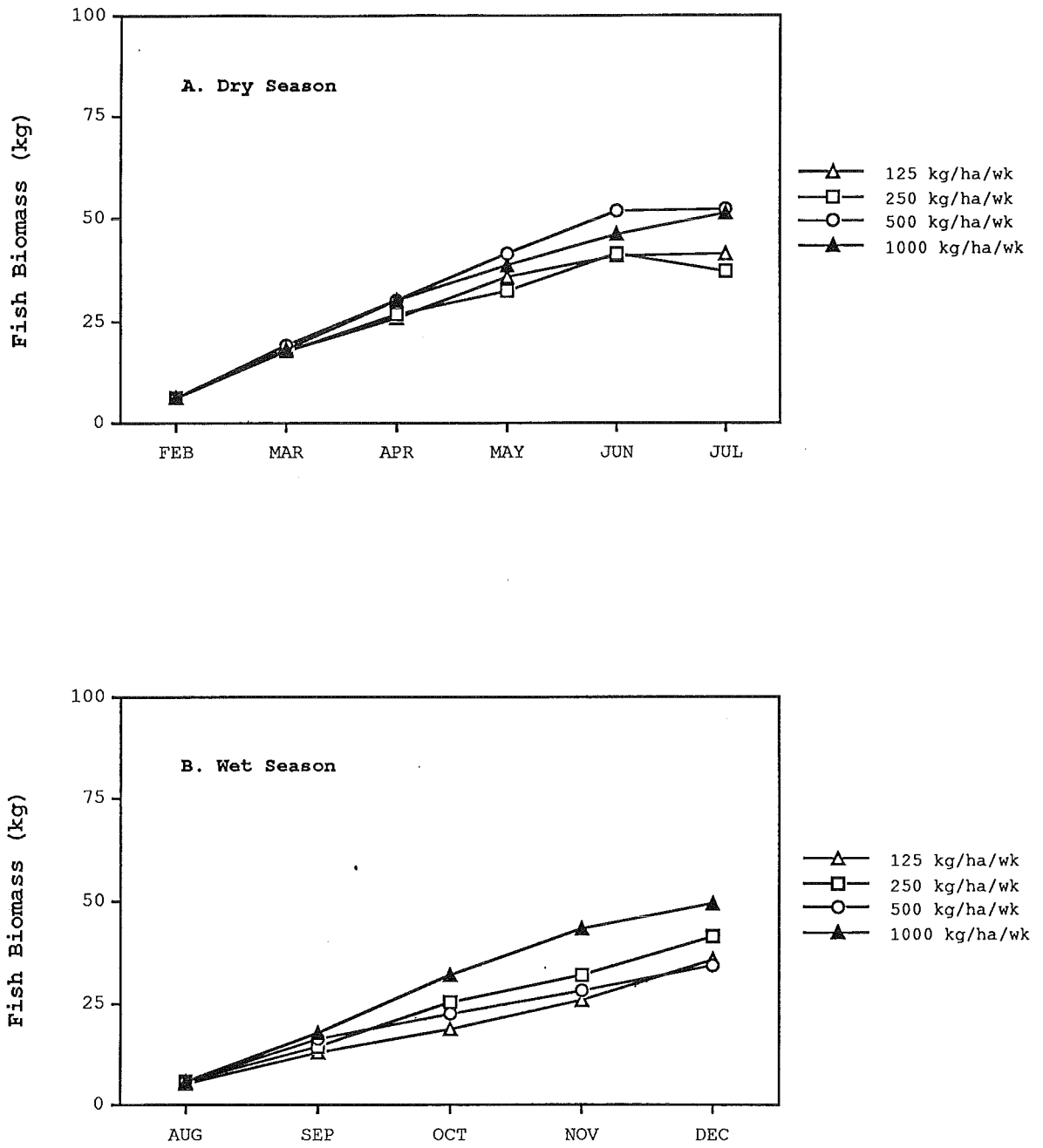


Figure 9. Trends in mean fish biomass in the experimental ponds.

APPENDIX

Complete Set of Data from Cycle III of the Pond Dynamics/Aquaculture CRSP in Ayutthaya, Thailand

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Units of Measurement and Abbreviations Used in the Appendix Tables

Daily Weather Measurements:

SOLAR1 (solar radiation)	E/m ² /d
SOLAR2 (solar radiation)	cal/cm ² /d
RAIN (rainfall)	cm/d
WIND (wind speed)	km/hr
ATEMPMAX (max air temperature)	°C
ATEMPMIN (min air temperature)	°C
EVAP (evaporation)	mm/d

Daily Pond Measurements:

DEPTH	m
INFLOW	Y/N
OVERFLOW	Y/N
"nil"	<i>Oreochromis niloticus</i>

Weekly and Twice-Weekly Measurements:

All DO (dissolved oxygen)	mg/L
All TEMP (temperature)	°C
ALKA (alkalinity)	mg/L (as CaCO ₃)
HARD (total hardness)	mg/L (as CaCO ₃)
All N (Kjeldahl, NO ₂ , NO ₃ , Total)	mg/L
All P (Total, Ortho-PO ₄)	mg/L
SECCHI DISK	cm
CHLOROPHYLL <i>a</i> , <i>b</i> , or <i>c</i>	mg/m ³

Diurnal Measurements:

All DO (dissolved oxygen)	mg/L
All TEMP (temperature)	°C

Fish/Shrimp Stocking, Sampling, and Harvesting:

"STK"	stocking
"SAM"	sampling
"HAR"	harvesting
"nil"	<i>Oreochromis niloticus</i>
POP. WEIGHT	kg
SAMPLE WEIGHT	g
SAMPLE LENGTH	cm
REPROD. WEIGHT	kg

Plankton and Benthos:

NET (PRIMARY) PRODUCTION	mg C/m ³ /d
GROSS (PRIMARY) PRODUCTION	mg C/m ³ /d

Water quality Characteristics:

ALKALIN (alkalinity).....	mg/L (as CaCO ₃)
HARDNESS	mg/L (as CaCO ₃)
All N (NH ₃ , NO ₂ , NO ₃ , NO ₂ +NO ₃)	mg/L
All P (Total, Ortho-P)	mg/L
Cl ⁻	mg/L
SALT	ppt
SO ₄	mg/L
BORON	mg/L
CALCIUM.....	mg/L
COPPER	mg/L
IRON.....	mg/L
MAGNESIUM	mg/L
POTASSIUM.....	mg/L
SODIUM.....	mg/L
ZINC.....	mg/L

Pond Soil Characteristics:

CLAY	%
SILT	%
SAND	%
ORGANIC MATTER	%
SOIL-P.....	ppm
SOIL Ca	meq/100g
SOIL Mg.....	meq/100g
SOIL K	ppm
SOIL Na.....	meq/100g
SOIL N.....	%
SOIL NH ₄	ppm
SOIL NO ₃	ppm
SOIL CEC.....	meq/100g
SOIL SALT	mmhos/cm
SOIL Al.....	ppm
SOIL Fe.....	ppm
SOIL Zn.....	ppm
SOIL Mn.....	ppm
SOIL Cu	ppm
SOIL SO ₄	ppm
EXCH. H	meq/100g

Analysis of Nutrients and Lime:

All NUTRIENTS

% (dry matter basis)

Pond Morphometrics:

AREA

m²

VOLUME

m³

Table 1. Daily Weather Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	SOLAR1	SOLAR2	RAIN	WIND	ATEMPMAX	ATEMPMIN	EVAP
8	2	1986	17.95		0.				
9	2	1986	20.7		0.				
10	2	1986	24.39		0.				8.
11	2	1986	25.48		0.	3.3			3.
12	2	1986	23.77		0.	4.7			4.
13	2	1986	23.71		0.	5.6			5.
14	2	1986	24.61		0.	9.4			4.
15	2	1986	24.1		0.				4.
16	2	1986	25.92		0.				4.
17	2	1986	25.88		0.	6.8			5.
18	2	1986	27.33		0.	7.7	35.	23.	
19	2	1986	29.55		0.	6.2	34.	23.	6.
20	2	1986	26.53		0.	7.1	34.5	22.	6.
21	2	1986	25.73		0.	5.2	34.5	22.	6.
22	2	1986	29.63		0.				4.
23	2	1986	24.21		0.				4.
24	2	1986	27.52		0.	6.4	33.	22.	5.
25	2	1986	20.25		0.	6.	32.5	24.5	6.
26	2	1986			0.	5.3	29.	25.	1.
27	2	1986	12.68		0.	3.9	31.5	25.	3.
28	2	1986	21.45		0.	9.	29.5	26.	3.
1	3	1986	22.13		0.				6.
2	3	1986	23.88		0.				6.
3	3	1986	28.71		0.	12.6	33.	16.	5.
4	3	1986	28.87		0.	10.4	27.	17.5	3.
5	3	1986	29.61		0.	11.6	29.	16.5	6.
6	3	1986	28.58		0.	6.2	31.5	19.5	6.
7	3	1986	26.78		0.	6.2	33.	19.	4.
8	3	1986	25.43		0.				4.
9	3	1986	25.71		0.				4.
10	3	1986	30.13		0.	6.9	33.5	21.5	3.
11	3	1986	31.18		0.	7.4	33.	25.	1.
12	3	1986	35.24		0.	8.2	33.	25.	4.
13	3	1986	34.05		0.	7.5	34.	25.	6.
14	3	1986	35.33		0.	6.2	33.5	25.	6.
15	3	1986	37.2		0.				6.
16	3	1986	36.92		0.				6.
17	3	1986	33.77		0.	6.6	35.	25.	6.
18	3	1986	31.42		0.	7.4	38.5	25.	4.
19	3	1986	34.3		0.	6.	34.5	26.	6.
20	3	1986	34.86		0.	6.1	37.	25.	4.
21	3	1986	35.43		0.	7.	36.	26.	6.
22	3	1986	36.91		0.				6.
23	3	1986	35.58		0.				6.
24	3	1986	37.1		0.	10.4	35.5	25.5	5.
25	3	1986	26.89		0.	11.4	35.5	26.	3.

Table 1. Daily Weather Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	SOLAR1	SOLAR2	RAIN	WIND	ATEMPMAX	ATEMPMIN	EVAP
26	3	1986	32.94		0.	8.1	33.	25.5	4.
27	3	1986	32.6		0.	7.2	34.5	27.	6.
28	3	1986	26.52		0.	7.2	36.5	26.5	5.
29	3	1986	35.08		0.				8.
30	3	1986	38.88		0.				8.
31	3	1986	35.36		0.	5.2	36.5	24.5	8.
1	4	1986	30.19		0.	5.5	36.	23.	2.
2	4	1986	34.85		0.	8.	36.	26.	4.
3	4	1986	30.7		0.	7.6	36.5	26.5	8.
4	4	1986	31.21		0.	8.8	35.5	26.5	6.
5	4	1986	32.42		0.	7.5	36.	26.	3.
6	4	1986	10.23		0.	8.3	34.5	26.	4.
7	4	1986			1.8	9.	37.	23.	3.
8	4	1986			0.	7.7	35.	25.	4.
9	4	1986	10.66		0.	4.3	34.5	26.	3.
10	4	1986	11.92		0.	6.2	34.5	25.5	5.
11	4	1986	11.62		0.	7.4	34.5	25.5	6.
12	4	1986	8.95		2.5	4.5	34.	25.	5.
13	4	1986	8.5		0.	2.1	33.	24.	7.
14	4	1986	22.7		0.	2.4	32.5	24.	4.
15	4	1986	34.09		0.	4.6	34.	25.	3.
16	4	1986	34.33		0.	5.8	36.	26.	3.
17	4	1986	34.76		0.	5.	35.5	25.5	6.
18	4	1986	36.79		0.	3.3	31.	25.5	6.
19	4	1986	38.68		0.	6.1	35.	26.	4.
20	4	1986	38.21		0.	12.2	37.	25.	4.
21	4	1986	38.49		0.	6.2	36.	26.	3.
22	4	1986	29.2		0.	8.1	37.5	25.5	4.
23	4	1986	35.98		0.	6.3	35.5	25.5	4.
24	4	1986	21.97		0.1	4.9	35.5	25.	6.
25	4	1986	23.		2.5	4.1	27.	24.5	4.
26	4	1986	28.85		0.1	5.8	33.	25.	4.
27	4	1986	23.03		0.	3.9	36.	26.	8.
28	4	1986	26.22		0.	5.3	36.	25.5	6.
29	4	1986	24.1		0.2	5.6	36.	27.5	1.
30	4	1986	22.61		0.	3.4	33.	27.5	7.
1	5	1986	26.53		0.	4.7	35.	26.5	1.
2	5	1986	23.92		1.6	0.2	32.5	25.5	7.
3	5	1986	21.47		0.	7.3	35.	25.	6.
4	5	1986	16.11		3.1	10.4	34.	25.5	
5	5	1986	22.63		0.	6.4	34.	25.5	
6	5	1986	25.88		0.	3.2	34.	26.	2.
7	5	1986	23.18		0.2	4.4	35.	24.	2.
8	5	1986	5.81		0.	4.7	35.	25.	1.
9	5	1986	3.55		14.	13.4	27.	25.	
10	5	1986	12.23		6.6	9.2	27.	25.	
11	5	1986	24.		0.1	5.6	29.	25.	4.

Table 1. Daily Weather Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	SOLAR1	SOLAR2	RAIN	WIND	ATEMPMAX	ATEMPMIN	EVAP
12	5	1986	29.13		1.5	7.4	32.	26.	6.
13	5	1986	26.94		2.5	6.7	33.	25.	7.
14	5	1986	18.23		0.	4.7	32.5	26.	2.
15	5	1986	26.32		0.2	10.9	32.	26.	4.
16	5	1986	25.49		0.	5.5	34.	26.	4.
17	5	1986	21.61		0.	9.1	35.	25.5	11.
18	5	1986	23.57		0.	8.3	34.	26.	8.
19	5	1986	25.48		0.2	7.6	34.	26.	7.
20	5	1986	22.71		0.	5.8	35.	27.	3.
21	5	1986	20.05		0.	5.2	33.	26.	11.
22	5	1986	18.87		0.	5.8	34.	24.5	4.
23	5	1986	17.43		0.	3.1	33.5	25.5	5.
24	5	1986	21.92		0.	7.6	34.	26.	3.
25	5	1986	21.87		0.	10.8	37.	25.	5.
26	5	1986	27.3		0.	9.1	32.5	26.	5.
27	5	1986	28.73		0.	5.4	34.	26.	7.
28	5	1986	30.43		0.	6.	35.5	27.5	6.
29	5	1986	32.43		0.	5.6	37.	28.	5.
30	5	1986	27.29		0.	4.8	35.	27.	7.
31	5	1986	35.98		0.	6.5	34.	25.	7.
1	6	1986	34.95		0.	6.3	36.	25.5	6.
2	6	1986	34.64		0.	6.3	35.5	26.5	6.
3	6	1986	34.57		0.	6.2	36.	26.	6.
4	6	1986	37.36		0.	7.8	36.5	27.	7.
5	6	1986	26.07		0.1	4.5	37.	26.5	5.
6	6	1986	22.44		0.	7.6	33.5	25.5	3.
7	6	1986	22.06		1.8	5.1	31.5	26.	7.
8	6	1986	19.76		0.4	2.3	32.5	25.	5.
9	6	1986	33.83		0.2	5.1	34.	25.	1.
10	6	1986	34.29		1.8	5.5	36.5	25.5	5.
11	6	1986	20.64		0.2	4.8	35.	26.	1.
12	6	1986	26.51		0.5	5.5	33.	25.5	2.
13	6	1986	15.99		0.4	4.1	34.	25.5	6.
14	6	1986	19.7		0.	3.4	34.	24.	5.
15	6	1986	23.4		0.	3.9	34.	24.5	0.
16	6	1986	27.21		0.	5.5	36.	27.	5.
17	6	1986	28.06		1.8	7.2	36.5	27.5	6.
18	6	1986	25.61		2.4	8.4	36.5	27.	8.
19	6	1986	16.03		0.	6.1	36.	25.5	11.
20	6	1986	11.96		0.	5.92	31.5	25.5	4.
21	6	1986	22.69		0.	5.8	29.5	25.	1.
22	6	1986	27.39		0.	8.5	34.	26.	4.
23	6	1986	21.38		0.	6.3	34.	26.	1.
24	6	1986	15.72		0.2	7.2	34.	25.5	4.
25	6	1986	17.89		0.4	7.3	30.5	26.	1.
26	6	1986	16.86		0.	7.3	31.5	24.	3.
27	6	1986			0.	8.2	31.	25.	5.

Table 1. Daily Weather Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	SOLAR1	SOLAR2	RAIN	WIND	ATEMPMAX	ATEMPMIN	EVAP
28	6	1986			0.	7.4	33.	25.5	4.
29	6	1986			0.	5.3	35.	26.	3.
30	6	1986	26.79		0.	6.8	35.	26.	7.
1	7	1986	32.26		0.9	6.4	37.	27.5	7.
2	7	1986	31.62		0.	13.4	37.	26.	4.
3	7	1986			0.	8.5	37.	26.	1.
4	7	1986	27.57		1.55	7.	34.	26.	6.
5	7	1986	20.21		0.	7.4	33.5	26.5	3.
6	7	1986	13.77		0.	6.	30.5	25.5	3.

Table 1. Daily Weather Measurements. Ayutthaya, Thailand, Cycle III, Wet Season

DAY	MONTH	YEAR	SOLAR1	SOLAR2	RAIN	WIND	ATEMPMAX	ATEMPMIN	EVAP
16	9	1986	22.8		0.	1.3	36.	27.	6.
17	9	1986	24.46		5.	1.1	36.5	27.5	8.
18	9	1986	27.74		0.	0.7	35.	24.5	4.
19	9	1986	28.42		0.	1.3	34.5	25.5	8.
20	9	1986	27.85		0.2	1.9	34.	24.5	5.
21	9	1986	27.89		0.	2.6	31.	25.5	1.
22	9	1986	18.92		0.	1.6	33.	25.	3.
23	9	1986	25.43		0.	5.3	32.5	25.5	12.
24	9	1986	13.29		0.	0.4	33.5	26.5	7.
25	9	1986	15.78		0.8	2.5	31.5	25.5	2.
26	9	1986	27.9		3.4	1.6	33.5	24.5	4.
27	9	1986	26.83		0.	1.7	34.	25.	3.
28	9	1986	28.12		9.4	1.3	34.5	26.5	4.
29	9	1986	16.94		0.	1.3	34.5	24.5	4.
30	9	1986	24.19		8.5	9.8	32.	25.	5.
1	10	1986	5.8		6.4	1.	33.	24.5	
2	10	1986	17.86		0.35	2.1	28.	24.	
3	10	1986	21.31		0.2	1.7	28.5	25.	2.5
4	10	1986	17.42		0.5	1.7	31.5	24.5	6.
5	10	1986	26.09		1.35	3.2	32.	24.	4.
6	10	1986	16.95		3.3	1.2	33.	23.	6.
7	10	1986	23.05		0.2	1.6	30.5	25.	5.
8	10	1986	24.51		1.3	1.8	33.	26.5	7.
9	10	1986	25.56		0.7	1.8	33.5	25.	8.
10	10	1986	20.15		0.	1.4	35.	25.	8.
11	10	1986	25.02		0.	3.3	33.5	25.5	4.
12	10	1986	20.79		2.4	1.7	34.	25.	4.
13	10	1986	19.02		0.	1.1	34.5	25.	10.
14	10	1986	13.82		0.	2.2	33.	26.	6.
15	10	1986	26.69		2.1	2.	31.5	25.	4.
16	10	1986	25.02		0.	1.7	35.	24.	2.
17	10	1986	19.53		0.	1.2	33.	26.	10.
18	10	1986	23.64		0.	1.	34.5	25.	4.
19	10	1986	25.48		0.	1.1	34.	26.	4.
20	10	1986	24.99		0.	1.1	34.	27.	5.
21	10	1986	26.93		0.	1.4	34.	27.5	4.
22	10	1986	28.19		0.	4.	34.	28.	6.
23	10	1986	13.3		2.1	2.7	33.	24.	4.
24	10	1986	25.42		0.4	1.7	34.	25.	3.
25	10	1986	15.05		0.3	2.1	34.	25.5	4.
26	10	1986	27.78		0.	1.3	30.5	26.5	1.
27	10	1986	20.59		0.	1.7	34.	27.	6.
28	10	1986	23.01		0.	2.8	33.5	27.	4.
29	10	1986	18.63		1.55	1.6	33.5	25.5	4.
30	10	1986	25.23		0.	6.1	31.	24.5	5.5
31	10	1986	22.83		0.	10.3	29.	24.5	5.
1	11	1986	28.76		0.	3.5	29.5	25.	5.

Table 1. Daily Weather Measurements. Ayutthaya, Thailand, Cycle III, Wet Season

DAY	MONTH	YEAR	SOLAR1	SOLAR2	RAIN	WIND	ATEMPMAX	ATEMPMIN	EVAP
2	11	1986	25.26		0.	2.2	30.	26.	5.
3	11	1986	27.32		0.	2.	31.	24.	5.
4	11	1986	27.1		0.	5.1	33.5	24.5	5.
5	11	1986	24.08		0.	2.1	33.	25.	4.
6	11	1986	27.28		0.	1.	32.	24.5	6.
7	11	1986	26.57		0.	1.	33.	25.5	4.
8	11	1986	23.72		0.	2.2	33.	25.5	4.
9	11	1986	23.79		0.	2.6	33.	25.5	5.
10	11	1986	24.97		0.	1.2	33.	26.5	3.
11	11	1986	24.05		0.	3.1	31.5	24.	5.
12	11	1986	26.34		0.	1.	31.5	26.	5.
13	11	1986	22.76		0.	2.1	34.	25.5	5.
14	11	1986	16.73		2.	1.8	33.5	25.5	5.
15	11	1986	18.94		0.	3.	32.	24.	0.
16	11	1986	15.68		0.	1.3	32.	24.	4.
17	11	1986	18.64		0.	2.4	31.5	24.5	0.
18	11	1986	26.05		0.	2.5	31.5	25.	4.
19	11	1986	25.45		0.	3.6	32.5	23.5	5.
20	11	1986	26.33		0.	6.	31.5	22.	6.
21	11	1986	21.08		0.	2.3	30.5	22.5	5.
22	11	1986	25.28		0.	3.	31.	24.5	5.
23	11	1986	23.85		0.	1.8	31.	24.	7.
24	11	1986	25.12		0.	8.1	31.	21.5	2.
25	11	1986	23.21		0.	7.3	30.5	21.5	8.
26	11	1986	22.26		0.	10.2	30.5	22.5	5.
27	11	1986	24.82		0.	8.6	30.	22.	5.
28	11	1986	24.92		0.	7.5	30.5	23.5	7.
29	11	1986	24.79		0.	12.1	31.	22.	7.
30	11	1986	24.86		0.	8.3	29.	20.	8.
1	12	1986	24.68		0.	5.	28.5	20.	5.
2	12	1986	24.91		0.	8.3	28.5	20.5	7.
3	12	1986	21.88		1.6	10.9	29.5	22.	5.
4	12	1986	7.05		0.	12.	29.5	19.	2.
5	12	1986	9.48		0.	2.8	22.	20.	3.
6	12	1986	23.16		0.	2.8	25.	21.	3.
7	12	1986	20.06		0.4	3.7	23.	21.	4.
8	12	1986	23.7		0.	2.	31.5	21.	3.
9	12	1986	25.14		0.	7.	31.5	21.	2.
10	12	1986	24.76		0.	3.9	30.	21.	5.
11	12	1986	24.15		0.	2.5	31.	21.	5.
12	12	1986	23.71		0.	1.3	31.5	21.5	5.
13	12	1986	23.75		0.	1.6	29.	20.	5.
14	12	1986	23.31		0.	2.4	29.5	20.5	3.
15	12	1986	23.3		0.	3.3	31.	21.	4.
16	12	1986	23.99		0.	3.4	31.5	20.5	5.
17	12	1986	23.62		0.	2.8	32.5	26.	6.
18	12	1986	23.77		0.	2.3	31.	22.	5.

Table 1. Daily Weather Measurements. Ayutthaya, Thailand, Cycle III, Wet Season

DAY	MONTH	YEAR	SOLAR1	SOLAR2	RAIN	WIND	ATEMPMAX	ATEMPMIN	EVAP
19	12	1986	23.86		0.	6.4	31.5	22.	5.
20	12	1986	23.9		0.	3.3	33.5	19.	4.
21	12	1986	24.87		0.	1.2	32.5	21.	8.
22	12	1986	20.92		0.	5.8	31.5	20.	4.
23	12	1986	22.75		0.	2.3	30.	18.	4.
24	12	1986	24.71		0.	4.2	30.	18.	4.
25	12	1986	24.87		0.	3.8	31.5	21.	6.
26	12	1986	23.68		0.	2.7	32.5	19.5	6.
27	12	1986	18.58		0.	3.5	31.	20.	4.
28	12	1986	24.44		0.	3.1	31.5	21.	5.

Table 2. Daily Pond Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW	DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW
13	2	1986	D1	0.88	N	N	17	2	1986	C3	0.84	N	N
13	2	1986	D2	0.78	N	N	17	2	1986	D1	0.86	N	N
13	2	1986	D3	0.89	N	N	17	2	1986	D2	0.76	N	N
14	2	1986	A1	0.82	N	N	17	2	1986	D3	0.86	N	N
14	2	1986	A2	0.79	N	N	18	2	1986	A1	0.78	Y	N
14	2	1986	A3	0.84	N	N	18	2	1986	A2	0.76	N	N
14	2	1986	B1	0.81	N	N	18	2	1986	A3	0.82	N	N
14	2	1986	B2	0.81	N	N	18	2	1986	B1	0.79	N	N
14	2	1986	B3	0.79	N	N	18	2	1986	B2	0.89	Y	N
14	2	1986	C1	0.75	N	N	18	2	1986	B3	0.77	N	N
14	2	1986	C2	0.81	N	N	18	2	1986	C1	0.74	Y	N
14	2	1986	C3	0.87	N	N	18	2	1986	C2	0.8	N	N
14	2	1986	D1	0.87	N	N	18	2	1986	C3	0.84	N	N
14	2	1986	D2	0.78	N	N	18	2	1986	D1	0.85	N	N
14	2	1986	D3	0.88	N	N	18	2	1986	D2	0.78	Y	N
15	2	1986	A1	0.79	N	N	18	2	1986	D3	0.85	N	N
15	2	1986	A2	0.78	N	N	19	2	1986	A1	0.77	N	N
15	2	1986	A3	0.83	N	N	19	2	1986	A2	0.76	Y	N
15	2	1986	B1	0.81	N	N	19	2	1986	A3	0.82	N	N
15	2	1986	B2	0.8	N	N	19	2	1986	B1	0.78	N	N
15	2	1986	B3	0.79	N	N	19	2	1986	B2	0.87	N	N
15	2	1986	C1	0.73	N	N	19	2	1986	B3	0.75	N	N
15	2	1986	C2	0.81	N	N	19	2	1986	C1	0.72	N	N
15	2	1986	C3	0.86	N	N	19	2	1986	C2	0.79	N	N
15	2	1986	D1	0.87	N	N	19	2	1986	C3	0.83	N	N
15	2	1986	D2	0.77	N	N	19	2	1986	D1	0.85	N	N
15	2	1986	D3	0.87	N	N	19	2	1986	D2	0.77	N	N
16	2	1986	A1	0.77	N	N	19	2	1986	D3	0.84	N	N
16	2	1986	A2	0.77	N	N	20	2	1986	A1	0.76	N	N
16	2	1986	A3	0.83	N	N	20	2	1986	A2	0.85	Y	N
16	2	1986	B1	0.8	N	N	20	2	1986	A3	0.81	N	N
16	2	1986	B2	0.79	N	N	20	2	1986	B1	0.77	N	N
16	2	1986	B3	0.78	N	N	20	2	1986	B2	0.85	N	N
16	2	1986	C1	0.71	N	N	20	2	1986	B3	0.84	Y	N
16	2	1986	C2	0.8	N	N	20	2	1986	C1	0.71	N	N
16	2	1986	C3	0.85	N	N	20	2	1986	C2	0.78	N	N
16	2	1986	D1	0.86	N	N	20	2	1986	C3	0.82	N	N
16	2	1986	D2	0.77	N	N	20	2	1986	D1	0.84	N	N
16	2	1986	D3	0.87	N	N	20	2	1986	D2	0.76	N	N
17	2	1986	A1	0.75	N	N	20	2	1986	D3	0.83	N	N
17	2	1986	A2	0.76	N	N	21	2	1986	A1	0.9	Y	N
17	2	1986	A3	0.82	N	N	21	2	1986	A2	0.91	Y	N
17	2	1986	B1	0.79	N	N	21	2	1986	A3	0.83	Y	N
17	2	1986	B2	0.83	N	N	21	2	1986	B1	0.76	Y	N
17	2	1986	B3	0.77	N	N	21	2	1986	B2	0.9	Y	N
17	2	1986	C1	0.7	N	N	21	2	1986	B3	0.83	N	N
17	2	1986	C2	0.8	N	N	21	2	1986	C1	0.82	Y	N

Table 2. Daily Pond Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW	DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW
21	2	1986	C2	0.79	N	N	25	2	1986	C1	0.81	N	N
21	2	1986	C3	0.89	Y	N	25	2	1986	C2	0.9	Y	N
21	2	1986	D1	0.93	Y	N	25	2	1986	C3	0.86	N	N
21	2	1986	D2	0.91	Y	N	25	2	1986	D1	0.9	N	N
21	2	1986	D3	0.89	Y	N	25	2	1986	D2	0.86	N	N
22	2	1986	A1	0.89	N	N	25	2	1986	D3	0.91	N	N
22	2	1986	A2	0.9	N	N	26	2	1986	A1	0.85	N	N
22	2	1986	A3	0.85	Y	N	26	2	1986	A2	0.84	N	N
22	2	1986	B1	0.8	Y	N	26	2	1986	A3	0.87	N	N
22	2	1986	B2	0.87	N	N	26	2	1986	B1	0.93	N	N
22	2	1986	B3	0.82	N	N	26	2	1986	B2	0.81	N	N
22	2	1986	C1	0.82	N	N	26	2	1986	B3	0.88	N	N
22	2	1986	C2	0.79	N	N	26	2	1986	C1	0.85	Y	N
22	2	1986	C3	0.89	N	N	26	2	1986	C2	0.9	N	N
22	2	1986	D1	0.92	N	N	26	2	1986	C3	0.85	N	N
22	2	1986	D2	0.9	N	N	26	2	1986	D1	0.9	N	N
22	2	1986	D3	0.89	N	N	26	2	1986	D2	0.86	N	N
23	2	1986	A1	0.88	N	N	26	2	1986	D3	0.91	N	N
23	2	1986	A2	0.89	N	N	27	2	1986	A1	0.85	N	N
23	2	1986	A3	0.86	Y	N	27	2	1986	A2	0.83	N	N
23	2	1986	B1	0.9	Y	N	27	2	1986	A3	0.87	N	N
23	2	1986	B2	0.85	N	N	27	2	1986	B1	0.93	N	N
23	2	1986	B3	0.81	N	N	27	2	1986	B2	0.79	N	N
23	2	1986	C1	0.81	N	N	27	2	1986	B3	0.87	N	N
23	2	1986	C2	0.78	N	N	27	2	1986	C1	0.95	Y	N
23	2	1986	C3	0.88	N	N	27	2	1986	C2	0.89	N	N
23	2	1986	D1	0.92	N	N	27	2	1986	C3	0.85	N	N
23	2	1986	D2	0.89	N	N	27	2	1986	D1	0.89	N	N
23	2	1986	D3	0.88	N	N	27	2	1986	D2	0.85	N	N
24	2	1986	A1	0.87	N	N	27	2	1986	D3	0.9	N	N
24	2	1986	A2	0.88	N	N	28	2	1986	A1	0.84	N	N
24	2	1986	A3	0.88	Y	N	28	2	1986	A2	0.82	N	N
24	2	1986	B1	0.96	Y	N	28	2	1986	A3	0.85	N	N
24	2	1986	B2	0.84	N	N	28	2	1986	B1	0.91	N	N
24	2	1986	B3	0.9	Y	N	28	2	1986	B2	0.77	N	N
24	2	1986	C1	0.81	N	N	28	2	1986	B3	0.86	N	N
24	2	1986	C2	0.81	Y	N	28	2	1986	C1	0.92	N	N
24	2	1986	C3	0.87	N	N	28	2	1986	C2	0.89	N	N
24	2	1986	D1	0.91	N	N	28	2	1986	C3	0.83	N	N
24	2	1986	D2	0.88	N	N	28	2	1986	D1	0.89	N	N
24	2	1986	D3	0.92	Y	N	28	2	1986	D2	0.83	N	N
25	2	1986	A1	0.86	N	N	28	2	1986	D3	0.9	N	N
25	2	1986	A2	0.85	N	N	1	3	1986	A1	0.83	N	N
25	2	1986	A3	0.88	N	N	1	3	1986	A2	0.8	N	N
25	2	1986	B1	0.95	N	N	1	3	1986	A3	0.84	N	N
25	2	1986	B2	0.83	N	N	1	3	1986	B1	0.9	N	N
25	2	1986	B3	0.89	N	N	1	3	1986	B2	0.75	N	N

Table 2. Daily Pond Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW	DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW
9	4	1986	C2	0.94	N	N	13	4	1986	C1	0.8	N	N
9	4	1986	C3	0.91	N	N	13	4	1986	C2	0.94	N	N
9	4	1986	D1	0.93	N	N	13	4	1986	C3	0.89	N	N
9	4	1986	D2	0.91	N	N	13	4	1986	D1	0.93	N	N
9	4	1986	D3	0.95	N	N	13	4	1986	D2	0.88	N	N
10	4	1986	A1	0.9	N	N	13	4	1986	D3	0.93	N	N
10	4	1986	A2	0.9	N	N	14	4	1986	A1	0.88	N	N
10	4	1986	A3	0.95	N	N	14	4	1986	A2	0.87	N	N
10	4	1986	B1	0.98	N	N	14	4	1986	A3	0.94	N	N
10	4	1986	B2	0.84	N	N	14	4	1986	B1	0.96	N	N
10	4	1986	B3	0.89	N	N	14	4	1986	B2	0.8	N	N
10	4	1986	C1	0.82	N	N	14	4	1986	B3	0.86	N	N
10	4	1986	C2	0.93	N	N	14	4	1986	C1	0.78	N	N
10	4	1986	C3	0.9	N	N	14	4	1986	C2	0.93	N	N
10	4	1986	D1	0.92	N	N	14	4	1986	C3	0.88	N	N
10	4	1986	D2	0.9	N	N	14	4	1986	D1	0.93	N	N
10	4	1986	D3	0.94	N	N	14	4	1986	D2	0.87	N	N
11	4	1986	A1	0.89	N	N	14	4	1986	D3	0.93	N	N
11	4	1986	A2	0.88	N	N	15	4	1986	A1	0.87	N	N
11	4	1986	A3	0.94	N	N	15	4	1986	A2	0.85	N	N
11	4	1986	B1	0.97	N	N	15	4	1986	A3	0.95	N	N
11	4	1986	B2	0.82	N	N	15	4	1986	B1	0.95	N	N
11	4	1986	B3	0.88	N	N	15	4	1986	B2	0.78	N	N
11	4	1986	C1	0.81	N	N	15	4	1986	B3	0.86	N	N
11	4	1986	C2	0.92	N	N	15	4	1986	C1	0.77	N	N
11	4	1986	C3	0.89	N	N	15	4	1986	C2	0.92	N	N
11	4	1986	D1	0.92	N	N	15	4	1986	C3	0.88	N	N
11	4	1986	D2	0.88	N	N	15	4	1986	D1	0.92	N	N
11	4	1986	D3	0.93	N	N	15	4	1986	D2	0.86	N	N
12	4	1986	A1	0.87	N	N	15	4	1986	D3	0.92	N	N
12	4	1986	A2	0.87	N	N	16	4	1986	A1	0.86	N	N
12	4	1986	A3	0.93	N	N	16	4	1986	A2	0.84	N	N
12	4	1986	B1	0.96	N	N	16	4	1986	A3	0.94	N	N
12	4	1986	B2	0.81	N	N	16	4	1986	B1	0.94	N	N
12	4	1986	B3	0.85	N	N	16	4	1986	B2	0.77	N	N
12	4	1986	C1	0.79	N	N	16	4	1986	B3	0.85	N	N
12	4	1986	C2	0.92	N	N	16	4	1986	C1	0.76	N	N
12	4	1986	C3	0.87	N	N	16	4	1986	C2	0.92	N	N
12	4	1986	D1	0.91	N	N	16	4	1986	C3	0.87	N	N
12	4	1986	D2	0.87	N	N	16	4	1986	D1	0.91	N	N
12	4	1986	D3	0.93	N	N	16	4	1986	D2	0.85	N	N
13	4	1986	A1	0.87	N	N	16	4	1986	D3	0.91	N	N
13	4	1986	A2	0.88	N	N	17	4	1986	A1	0.85	N	N
13	4	1986	A3	0.95	N	N	17	4	1986	A2	0.83	N	N
13	4	1986	B1	0.97	N	N	17	4	1986	A3	0.94	N	N
13	4	1986	B2	0.83	N	N	17	4	1986	B1	0.93	N	N
13	4	1986	B3	0.88	N	N	17	4	1986	B2	0.75	N	N

Table 2. Daily Pond Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW	DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW
17	4	1986	B3	0.84	N	N	21	4	1986	B2	0.87	N	N
17	4	1986	C1	0.74	N	N	21	4	1986	B3	0.88	N	N
17	4	1986	C2	0.92	N	N	21	4	1986	C1	0.88	N	N
17	4	1986	C3	0.86	N	N	21	4	1986	C2	0.9	N	N
17	4	1986	D1	0.91	N	N	21	4	1986	C3	0.89	N	N
17	4	1986	D2	0.83	N	N	21	4	1986	D1	0.91	N	N
17	4	1986	D3	0.9	N	N	21	4	1986	D2	0.89	N	N
18	4	1986	A1	0.84	N	N	21	4	1986	D3	0.92	N	N
18	4	1986	A2	0.82	N	N	22	4	1986	A1	0.88	N	N
18	4	1986	A3	0.95	N	N	22	4	1986	A2	0.89	N	N
18	4	1986	B1	0.92	N	N	22	4	1986	A3	0.92	N	N
18	4	1986	B2	0.74	N	N	22	4	1986	B1	0.87	N	N
18	4	1986	B3	0.84	N	N	22	4	1986	B2	0.85	N	N
18	4	1986	C1	0.73	N	N	22	4	1986	B3	0.87	N	N
18	4	1986	C2	0.91	N	N	22	4	1986	C1	0.86	N	N
18	4	1986	C3	0.85	N	N	22	4	1986	C2	0.9	N	N
18	4	1986	D1	0.9	N	N	22	4	1986	C3	0.88	N	N
18	4	1986	D2	0.82	N	N	22	4	1986	D1	0.9	N	N
18	4	1986	D3	0.89	N	N	22	4	1986	D2	0.88	N	N
19	4	1986	A1	0.92	N	N	22	4	1986	D3	0.91	N	N
19	4	1986	A2	0.94	N	N	23	4	1986	A1	0.88	N	N
19	4	1986	A3	0.95	N	N	23	4	1986	A2	0.88	N	N
19	4	1986	B1	0.93	N	N	23	4	1986	A3	0.92	N	N
19	4	1986	B2	0.91	N	N	23	4	1986	B1	0.87	N	N
19	4	1986	B3	0.91	Y	N	23	4	1986	B2	0.83	N	N
19	4	1986	C1	0.92	Y	N	23	4	1986	B3	0.86	N	N
19	4	1986	C2	0.92	Y	N	23	4	1986	C1	0.84	N	N
19	4	1986	C3	0.92	Y	N	23	4	1986	C2	0.89	N	N
19	4	1986	D1	0.93	Y	N	23	4	1986	C3	0.88	N	N
19	4	1986	D2	0.92	Y	N	23	4	1986	D1	0.9	N	N
19	4	1986	D3	0.94	Y	N	23	4	1986	D2	0.87	N	N
20	4	1986	A1	0.91	N	N	23	4	1986	D3	0.9	N	N
20	4	1986	A2	0.92	N	N	24	4	1986	A1	0.87	N	N
20	4	1986	A3	0.93	N	N	24	4	1986	A2	0.87	N	N
20	4	1986	B1	0.92	N	N	24	4	1986	A3	0.91	N	N
20	4	1986	B2	0.89	N	N	24	4	1986	B1	0.85	N	N
20	4	1986	B3	0.9	N	N	24	4	1986	B2	0.82	N	N
20	4	1986	C1	0.9	N	N	24	4	1986	B3	0.84	N	N
20	4	1986	C2	0.91	N	N	24	4	1986	C1	0.82	N	N
20	4	1986	C3	0.9	N	N	24	4	1986	C2	0.88	N	N
20	4	1986	D1	0.92	N	N	24	4	1986	C3	0.87	N	N
20	4	1986	D2	0.9	N	N	24	4	1986	D1	0.89	N	N
20	4	1986	D3	0.93	N	N	24	4	1986	D2	0.85	N	N
21	4	1986	A1	0.9	N	N	24	4	1986	D3	0.9	N	N
21	4	1986	A2	0.91	N	N	25	4	1986	A1	0.9	N	N
21	4	1986	A3	0.91	N	N	25	4	1986	A2	0.89	N	N
21	4	1986	B1	0.9	N	N	25	4	1986	A3	0.94	N	N

Table 2. Daily Pond Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW	DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW
3	5	1986	A2	0.83	N	N	7	5	1986	A1	0.93	N	N
3	5	1986	A3	0.94	N	N	7	5	1986	A2	0.92	N	N
3	5	1986	B1	0.89	N	N	7	5	1986	A3	0.97	N	N
3	5	1986	B2	0.7	N	N	7	5	1986	B1	0.92	N	N
3	5	1986	B3	0.84	N	N	7	5	1986	B2	0.93	N	N
3	5	1986	C1	0.75	N	N	7	5	1986	B3	0.91	N	N
3	5	1986	C2	0.95	N	N	7	5	1986	C1	0.88	N	N
3	5	1986	C3	0.85	N	N	7	5	1986	C2	0.98	N	N
3	5	1986	D1	0.9	N	N	7	5	1986	C3	0.92	N	N
3	5	1986	D2	0.8	N	N	7	5	1986	D1	0.98	N	N
3	5	1986	D3	0.89	N	N	7	5	1986	D2	0.92	N	N
4	5	1986	A1	0.93	Y	N	7	5	1986	D3	0.98	N	N
4	5	1986	A2	0.94	Y	N	8	5	1986	A1	0.93	N	N
4	5	1986	A3	0.97	Y	N	8	5	1986	A2	0.92	N	N
4	5	1986	B1	0.91	Y	N	8	5	1986	A3	0.97	N	N
4	5	1986	B2	0.96	Y	N	8	5	1986	B1	0.91	N	N
4	5	1986	B3	0.92	Y	N	8	5	1986	B2	0.92	N	N
4	5	1986	C1	0.91	Y	N	8	5	1986	B3	0.9	N	N
4	5	1986	C2	0.96	Y	N	8	5	1986	C1	0.87	N	N
4	5	1986	C3	0.94	Y	N	8	5	1986	C2	0.98	N	N
4	5	1986	D1	0.97	Y	N	8	5	1986	C3	0.92	N	N
4	5	1986	D2	0.93	Y	N	8	5	1986	D1	0.98	N	N
4	5	1986	D3	0.96	Y	N	8	5	1986	D2	0.91	N	N
5	5	1986	A1	0.95	N	N	8	5	1986	D3	0.98	N	N
5	5	1986	A2	0.95	N	N	9	5	1986	A1	1.13	N	N
5	5	1986	A3	0.98	N	N	9	5	1986	A2	1.12	N	N
5	5	1986	B1	0.95	N	N	9	5	1986	A3	1.03	N	N
5	5	1986	B2	0.98	Y	N	9	5	1986	B1	1.02	N	N
5	5	1986	B3	0.93	N	N	9	5	1986	B2	1.05	N	N
5	5	1986	C1	0.92	Y	N	9	5	1986	B3	1.2	N	N
5	5	1986	C2	0.99	N	N	9	5	1986	C1	1.18	N	N
5	5	1986	C3	0.95	N	N	9	5	1986	C2	1.14	N	N
5	5	1986	D1	0.99	N	N	9	5	1986	C3	1.15	N	N
5	5	1986	D2	0.94	Y	N	9	5	1986	D1	1.18	N	N
5	5	1986	D3	1.	N	N	9	5	1986	D2	1.09	N	N
6	5	1986	A1	0.94	Y	N	9	5	1986	D3	1.2	N	N
6	5	1986	A2	0.94	Y	N	10	5	1986	A1	1.13	N	N
6	5	1986	A3	0.98	Y	N	10	5	1986	A2	1.12	N	N
6	5	1986	B1	0.92	Y	N	10	5	1986	A3	1.	N	N
6	5	1986	B2	0.94	N	N	10	5	1986	B1	1.	N	N
6	5	1986	B3	0.93	Y	N	10	5	1986	B2	1.04	N	N
6	5	1986	C1	0.9	N	N	10	5	1986	B3	1.18	N	N
6	5	1986	C2	0.99	Y	N	10	5	1986	C1	1.12	N	N
6	5	1986	C3	0.94	Y	N	10	5	1986	C2	1.2	N	N
6	5	1986	D1	0.99	Y	N	10	5	1986	C3	1.14	N	N
6	5	1986	D2	0.93	N	N	10	5	1986	D1	1.18	N	N
6	5	1986	D3	1.	Y	N	10	5	1986	D2	1.08	N	N

Table 2. Daily Pond Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW	DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW
10	5	1986	D3	1.2	N	N	14	5	1986	D2	1.02	N	N
11	5	1986	A1	1.08	N	N	14	5	1986	D3	1.17	N	N
11	5	1986	A2	1.07	N	N	15	5	1986	A1	1.03	N	N
11	5	1986	A3	0.99	N	N	15	5	1986	A2	1.02	N	N
11	5	1986	B1	0.98	N	N	15	5	1986	A3	0.97	N	N
11	5	1986	B2	0.96	N	N	15	5	1986	B1	0.97	N	N
11	5	1986	B3	1.15	N	N	15	5	1986	B2	0.91	N	N
11	5	1986	C1	1.09	N	N	15	5	1986	B3	1.09	N	N
11	5	1986	C2	1.2	N	N	15	5	1986	C1	1.02	N	N
11	5	1986	C3	1.1	N	N	15	5	1986	C2	1.2	N	N
11	5	1986	D1	1.18	N	N	15	5	1986	C3	1.04	N	N
11	5	1986	D2	1.05	N	N	15	5	1986	D1	1.14	N	N
11	5	1986	D3	1.19	N	N	15	5	1986	D2	1.02	N	N
12	5	1986	A1	1.06	N	N	15	5	1986	D3	1.16	N	N
12	5	1986	A2	1.07	N	N	16	5	1986	A1	0.96	N	N
12	5	1986	A3	0.98	N	N	16	5	1986	A2	1.	N	N
12	5	1986	B1	0.97	N	N	16	5	1986	A3	0.96	N	N
12	5	1986	B2	0.96	N	N	16	5	1986	B1	0.97	N	N
12	5	1986	B3	1.13	N	N	16	5	1986	B2	0.9	N	N
12	5	1986	C1	1.07	N	N	16	5	1986	B3	0.92	N	N
12	5	1986	C2	1.2	N	N	16	5	1986	C1	1.	N	N
12	5	1986	C3	1.08	N	N	16	5	1986	C2	1.2	N	N
12	5	1986	D1	1.17	N	N	16	5	1986	C3	1.05	N	N
12	5	1986	D2	1.05	N	N	16	5	1986	D1	1.17	N	N
12	5	1986	D3	1.18	N	N	16	5	1986	D2	0.94	N	N
13	5	1986	A1	1.04	N	N	16	5	1986	D3	0.96	N	Y
13	5	1986	A2	1.05	N	N	17	5	1986	A1	0.94	N	N
13	5	1986	A3	0.98	N	N	17	5	1986	A2	0.99	N	N
13	5	1986	B1	0.97	N	N	17	5	1986	A3	0.93	N	Y
13	5	1986	B2	0.94	N	N	17	5	1986	B1	0.96	N	N
13	5	1986	B3	1.12	N	N	17	5	1986	B2	0.88	N	N
13	5	1986	C1	1.05	N	N	17	5	1986	B3	0.91	N	N
13	5	1986	C2	1.2	N	N	17	5	1986	C1	0.97	N	Y
13	5	1986	C3	1.06	N	N	17	5	1986	C2	0.99	N	Y
13	5	1986	D1	1.16	N	N	17	5	1986	C3	0.94	N	Y
13	5	1986	D2	1.03	N	N	17	5	1986	D1	1.06	N	Y
13	5	1986	D3	1.17	N	N	17	5	1986	D2	0.93	N	N
14	5	1986	A1	1.03	N	N	17	5	1986	D3	0.96	N	N
14	5	1986	A2	1.03	N	N	18	5	1986	A1	0.93	N	N
14	5	1986	A3	0.98	N	N	18	5	1986	A2	0.97	N	N
14	5	1986	B1	0.97	N	N	18	5	1986	A3	0.93	N	N
14	5	1986	B2	0.92	N	N	18	5	1986	B1	0.95	N	N
14	5	1986	B3	1.11	N	N	18	5	1986	B2	0.86	N	N
14	5	1986	C1	1.04	N	N	18	5	1986	B3	0.9	N	N
14	5	1986	C2	1.2	N	N	18	5	1986	C1	0.96	N	N
14	5	1986	C3	1.06	N	N	18	5	1986	C2	0.98	N	N
14	5	1986	D1	1.15	N	N	18	5	1986	C3	0.93	N	N

Table 2. Daily Pond Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW	DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW
26	6	1986	D3	0.97	N	N	30	6	1986	D2	0.84	N	N
27	6	1986	A1	0.89	N	N	30	6	1986	D3	0.96	N	N
27	6	1986	A2	0.84	N	N	1	7	1986	A1	0.85	N	N
27	6	1986	A3	0.97	N	N	1	7	1986	A2	0.8	N	N
27	6	1986	B1	0.85	N	N	1	7	1986	A3	0.94	N	N
27	6	1986	B2	1.05	Y	N	1	7	1986	B1	0.81	N	N
27	6	1986	B3	0.87	N	N	1	7	1986	B2	0.91	N	N
27	6	1986	C1	0.87	N	N	1	7	1986	B3	0.84	N	N
27	6	1986	C2	0.94	N	N	1	7	1986	C1	0.82	N	N
27	6	1986	C3	0.9	N	N	1	7	1986	C2	0.91	N	N
27	6	1986	D1	0.94	N	N	1	7	1986	C3	0.86	N	N
27	6	1986	D2	0.87	N	N	1	7	1986	D1	0.91	N	N
27	6	1986	D3	0.98	N	N	1	7	1986	D2	0.83	N	N
28	6	1986	A1	0.88	N	N	1	7	1986	D3	0.94	N	N
28	6	1986	A2	0.83	N	N	2	7	1986	A1	0.85	N	N
28	6	1986	A3	0.98	N	N	2	7	1986	A2	0.79	N	N
28	6	1986	B1	0.85	N	N	2	7	1986	A3	0.94	N	N
28	6	1986	B2	0.97	N	N	2	7	1986	B1	0.81	N	N
28	6	1986	B3	0.87	N	N	2	7	1986	B2	0.9	N	N
28	6	1986	C1	0.86	N	N	2	7	1986	B3	0.84	N	N
28	6	1986	C2	0.93	N	N	2	7	1986	C1	0.81	N	N
28	6	1986	C3	0.89	N	N	2	7	1986	C2	0.91	N	N
28	6	1986	D1	0.93	N	N	2	7	1986	C3	0.86	N	N
28	6	1986	D2	0.86	N	N	2	7	1986	D1	0.91	N	N
28	6	1986	D3	0.97	N	N	2	7	1986	D2	0.83	N	N
29	6	1986	A1	0.87	N	N	2	7	1986	D3	0.94	N	N
29	6	1986	A2	0.82	N	N	3	7	1986	A1	0.84	N	N
29	6	1986	A3	0.96	N	N	3	7	1986	A2	0.79	N	N
29	6	1986	B1	0.84	N	N	3	7	1986	A3	0.93	N	N
29	6	1986	B2	0.95	N	N	3	7	1986	B1	0.79	N	N
29	6	1986	B3	0.86	N	N	3	7	1986	B2	0.89	N	N
29	6	1986	C1	0.84	N	N	3	7	1986	B3	0.83	N	N
29	6	1986	C2	0.93	N	N	3	7	1986	C1	0.81	N	N
29	6	1986	C3	0.89	N	N	3	7	1986	C2	0.9	N	N
29	6	1986	D1	0.93	N	N	3	7	1986	C3	0.85	N	N
29	6	1986	D2	0.85	N	N	3	7	1986	D1	0.9	N	N
29	6	1986	D3	0.97	N	N	3	7	1986	D2	0.82	N	N
30	6	1986	A1	0.87	N	N	3	7	1986	D3	0.94	N	N
30	6	1986	A2	0.81	N	N	4	7	1986	A1	0.84	N	N
30	6	1986	A3	0.95	N	N	4	7	1986	A2	0.78	N	N
30	6	1986	B1	0.83	N	N	4	7	1986	A3	0.92	N	N
30	6	1986	B2	0.93	N	N	4	7	1986	B1	0.79	N	N
30	6	1986	B3	0.85	N	N	4	7	1986	B2	0.88	N	N
30	6	1986	C1	0.84	N	N	4	7	1986	B3	0.82	N	N
30	6	1986	C2	0.92	N	N	4	7	1986	C1	0.79	N	N
30	6	1986	C3	0.88	N	N	4	7	1986	C2	0.9	N	N
30	6	1986	D1	0.91	N	N	4	7	1986	C3	0.85	N	N

Table 2. Daily Pond Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW
4	7	1986	D1	0.9	N	N
4	7	1986	D2	0.82	N	N
4	7	1986	D3	0.94	N	N
5	7	1986	A1	0.85	N	N
5	7	1986	A2	0.79	N	N
5	7	1986	A3	0.94	N	N
5	7	1986	B1	0.8	N	N
5	7	1986	B2	0.88	N	N
5	7	1986	B3	0.83	N	N
5	7	1986	C1	0.8	N	N
5	7	1986	C2	0.91	N	N
5	7	1986	C3	0.86	N	N
5	7	1986	D1	0.91	N	N
5	7	1986	D2	0.82	N	N
5	7	1986	D3	0.94	N	N
6	7	1986	A1	0.84	N	N
6	7	1986	A2	0.78	N	N
6	7	1986	A3	0.93	N	N
6	7	1986	B1	0.79	N	N
6	7	1986	B2	0.87	N	N
6	7	1986	B3	0.82	N	N
6	7	1986	C1	0.79	N	N
6	7	1986	C2	0.9	N	N
6	7	1986	C3	0.85	N	N
6	7	1986	D1	0.91	N	N
6	7	1986	D2	0.82	N	N
6	7	1986	D3	0.94	N	N

Table 2. Daily Pond Measurements. Ayutthaya, Thailand, Cycle III, Wet Season

DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW	DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW
7	8	1986	A1	0.91	N	N	10	8	1986	D2	0.9	N	N
7	8	1986	A2	0.96	N	N	10	8	1986	D3	0.96	N	N
7	8	1986	A3	0.95	N	N	11	8	1986	A1	0.97	N	N
7	8	1986	B1	0.91	N	N	11	8	1986	A2	0.93	N	N
7	8	1986	B2	0.91	N	N	11	8	1986	A3	1.	N	N
7	8	1986	B3	0.96	N	N	11	8	1986	B1	0.95	N	N
7	8	1986	C1	0.93	N	N	11	8	1986	B2	0.94	N	N
7	8	1986	C2	0.92	N	N	11	8	1986	B3	1.	N	N
7	8	1986	C3	0.91	N	N	11	8	1986	C1	0.96	N	N
7	8	1986	D1	0.9	N	N	11	8	1986	C2	0.98	N	N
7	8	1986	D2	0.87	N	N	11	8	1986	C3	0.95	N	N
7	8	1986	D3	0.9	N	N	11	8	1986	D1	0.97	N	N
8	8	1986	A1	0.92	N	N	11	8	1986	D2	0.93	N	N
8	8	1986	A2	0.9	N	N	11	8	1986	D3	1.	N	N
8	8	1986	A3	0.96	N	N	12	8	1986	A1	0.95	N	N
8	8	1986	B1	0.92	N	N	12	8	1986	A2	0.92	N	N
8	8	1986	B2	0.91	N	N	12	8	1986	A3	0.99	N	N
8	8	1986	B3	0.97	N	N	12	8	1986	B1	0.94	N	N
8	8	1986	C1	0.93	N	N	12	8	1986	B2	0.93	N	N
8	8	1986	C2	0.92	N	N	12	8	1986	B3	0.99	N	N
8	8	1986	C3	0.92	N	N	12	8	1986	C1	0.95	N	N
8	8	1986	D1	0.91	N	N	12	8	1986	C2	0.98	N	N
8	8	1986	D2	0.88	N	N	12	8	1986	C3	0.94	N	N
8	8	1986	D3	0.91	N	N	12	8	1986	D1	0.97	N	N
9	8	1986	A1	0.91	N	N	12	8	1986	D2	0.93	N	N
9	8	1986	A2	0.89	N	N	12	8	1986	D3	1.	N	N
9	8	1986	A3	0.95	N	N	13	8	1986	A1	0.96	N	N
9	8	1986	B1	0.91	N	N	13	8	1986	A2	0.9	N	N
9	8	1986	B2	0.9	N	N	13	8	1986	A3	0.99	N	N
9	8	1986	B3	0.95	N	N	13	8	1986	B1	0.93	N	N
9	8	1986	C1	0.91	N	N	13	8	1986	B2	0.91	N	N
9	8	1986	C2	0.92	N	N	13	8	1986	B3	0.98	N	N
9	8	1986	C3	0.91	N	N	13	8	1986	C1	0.93	N	N
9	8	1986	D1	0.91	N	N	13	8	1986	C2	0.97	N	N
9	8	1986	D2	0.87	N	N	13	8	1986	C3	0.92	N	N
9	8	1986	D3	0.9	N	N	13	8	1986	D1	0.97	N	N
10	8	1986	A1	0.95	N	N	13	8	1986	D2	0.92	N	N
10	8	1986	A2	0.91	N	N	13	8	1986	D3	0.99	N	N
10	8	1986	A3	0.99	N	N	14	8	1986	A1	0.95	N	N
10	8	1986	B1	0.94	N	N	14	8	1986	A2	0.89	N	N
10	8	1986	B2	0.92	N	N	14	8	1986	A3	0.98	N	N
10	8	1986	B3	0.98	N	N	14	8	1986	B1	0.91	N	N
10	8	1986	C1	0.94	N	N	14	8	1986	B2	0.9	N	N
10	8	1986	C2	0.95	N	N	14	8	1986	B3	0.97	N	N
10	8	1986	C3	0.94	N	N	14	8	1986	C1	0.92	N	N
10	8	1986	D1	0.94	N	N	14	8	1986	C2	0.96	N	N
							14	8	1986	C3	0.91	N	N

Table 2. Daily Pond Measurements. Ayutthaya, Thailand, Cycle III, Wet Season

DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW	DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW
30	8	1986	B3	0.97	N	N	3	9	1986	B2	0.88	N	N
30	8	1986	C1	0.93	Y	N	3	9	1986	B3	0.95	N	N
30	8	1986	C2	1.	N	N	3	9	1986	C1	0.89	N	N
30	8	1986	C3	0.89	N	N	3	9	1986	C2	0.97	N	N
30	8	1986	D1	0.92	N	N	3	9	1986	C3	0.92	N	N
30	8	1986	D2	0.91	N	N	3	9	1986	D1	0.91	N	N
30	8	1986	D3	1.04	N	N	3	9	1986	D2	0.88	N	N
31	8	1986	A1	0.95	N	N	3	9	1986	D3	1.02	N	N
31	8	1986	A2	0.93	N	N	4	9	1986	A1	0.93	N	N
31	8	1986	A3	0.99	N	N	4	9	1986	A2	0.88	N	N
31	8	1986	B1	0.91	N	N	4	9	1986	A3	0.98	N	N
31	8	1986	B2	0.91	N	N	4	9	1986	B1	0.89	N	N
31	8	1986	B3	0.96	N	N	4	9	1986	B2	0.87	N	N
31	8	1986	C1	0.93	N	N	4	9	1986	B3	0.94	N	N
31	8	1986	C2	0.99	N	N	4	9	1986	C1	0.88	N	N
31	8	1986	C3	0.93	Y	N	4	9	1986	C2	0.97	N	N
31	8	1986	D1	0.92	N	N	4	9	1986	C3	0.91	N	N
31	8	1986	D2	0.9	N	N	4	9	1986	D1	0.91	N	N
31	8	1986	D3	1.03	N	N	4	9	1986	D2	0.88	N	N
1	9	1986	A1	0.94	N	N	4	9	1986	D3	1.01	N	N
1	9	1986	A2	0.92	N	N	5	9	1986	A1	0.93	N	N
1	9	1986	A3	0.98	N	N	5	9	1986	A2	0.87	N	N
1	9	1986	B1	0.9	N	N	5	9	1986	A3	0.98	N	N
1	9	1986	B2	0.9	N	N	5	9	1986	B1	0.88	N	N
1	9	1986	B3	0.95	N	N	5	9	1986	B2	0.86	N	N
1	9	1986	C1	0.92	N	N	5	9	1986	B3	0.93	N	N
1	9	1986	C2	0.98	N	N	5	9	1986	C1	0.87	N	N
1	9	1986	C3	0.92	N	N	5	9	1986	C2	0.96	N	N
1	9	1986	D1	0.92	N	N	5	9	1986	C3	0.91	N	N
1	9	1986	D2	0.89	N	N	5	9	1986	D1	0.91	N	N
1	9	1986	D3	1.02	N	N	5	9	1986	D2	0.86	N	N
2	9	1986	A1	0.94	N	N	5	9	1986	D3	1.01	N	N
2	9	1986	A2	0.91	N	N	6	9	1986	A1	0.91	N	N
2	9	1986	A3	0.98	N	N	6	9	1986	A2	0.85	N	N
2	9	1986	B1	0.9	N	N	6	9	1986	A3	0.96	N	N
2	9	1986	B2	0.89	N	N	6	9	1986	B1	0.87	N	N
2	9	1986	B3	0.95	N	N	6	9	1986	B2	0.84	N	N
2	9	1986	C1	0.91	N	N	6	9	1986	B3	0.92	N	N
2	9	1986	C2	0.98	N	N	6	9	1986	C1	0.85	N	N
2	9	1986	C3	0.92	N	N	6	9	1986	C2	0.96	N	N
2	9	1986	D1	0.92	N	N	6	9	1986	C3	0.9	N	N
2	9	1986	D2	0.89	N	N	6	9	1986	D1	0.9	N	N
2	9	1986	D3	1.02	N	N	6	9	1986	D2	0.86	N	N
3	9	1986	A1	0.94	N	N	6	9	1986	D3	1.	N	N
3	9	1986	A2	0.89	N	N	7	9	1986	A1	0.9	N	N
3	9	1986	A3	0.98	N	N	7	9	1986	A2	0.84	N	N
3	9	1986	B1	0.89	N	N	7	9	1986	A3	0.96	N	N

Table 2. Daily Pond Measurements. Ayutthaya, Thailand, Cycle III, Wet Season

DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW	DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW
15	9	1986	A2	0.84	N	N	19	9	1986	A1	0.97	N	N
15	9	1986	A3	0.97	N	N	19	9	1986	A2	0.88	N	N
15	9	1986	B1	0.9	N	N	19	9	1986	A3	0.99	N	N
15	9	1986	B2	0.83	N	N	19	9	1986	B1	0.95	N	N
15	9	1986	B3	0.93	N	N	19	9	1986	B2	0.87	N	N
15	9	1986	C1	0.84	N	N	19	9	1986	B3	0.96	N	N
15	9	1986	C2	0.99	N	N	19	9	1986	C1	0.85	N	N
15	9	1986	C3	0.94	N	N	19	9	1986	C2	1.04	N	N
15	9	1986	D1	0.95	N	N	19	9	1986	C3	0.99	N	N
15	9	1986	D2	0.89	N	N	19	9	1986	D1	1.	N	N
15	9	1986	D3	0.94	N	N	19	9	1986	D2	0.92	N	N
16	9	1986	A1	0.94	N	N	19	9	1986	D3	0.95	N	N
16	9	1986	A2	0.83	N	N	20	9	1986	A1	0.96	N	N
16	9	1986	A3	0.97	N	N	20	9	1986	A2	0.86	N	N
16	9	1986	B1	0.9	N	N	20	9	1986	A3	0.98	N	N
16	9	1986	B2	0.82	N	N	20	9	1986	B1	0.95	N	N
16	9	1986	B3	0.9	N	N	20	9	1986	B2	0.85	N	N
16	9	1986	C1	0.82	N	N	20	9	1986	B3	0.95	N	N
16	9	1986	C2	0.98	N	N	20	9	1986	C1	0.84	N	N
16	9	1986	C3	0.93	N	N	20	9	1986	C2	1.03	N	N
16	9	1986	D1	0.94	N	N	20	9	1986	C3	0.98	N	N
16	9	1986	D2	0.88	N	N	20	9	1986	D1	1.	N	N
16	9	1986	D3	0.94	N	N	20	9	1986	D2	0.92	N	N
17	9	1986	A1	0.93	N	N	20	9	1986	D3	0.94	N	N
17	9	1986	A2	0.82	N	N	21	9	1986	A1	0.96	N	N
17	9	1986	A3	0.96	N	N	21	9	1986	A2	0.86	N	N
17	9	1986	B1	0.89	N	N	21	9	1986	A3	0.98	N	N
17	9	1986	B2	0.82	N	N	21	9	1986	B1	0.94	N	N
17	9	1986	B3	0.91	N	N	21	9	1986	B2	0.85	N	N
17	9	1986	C1	0.8	N	N	21	9	1986	B3	0.95	N	N
17	9	1986	C2	0.97	N	N	21	9	1986	C1	0.83	N	N
17	9	1986	C3	0.92	N	N	21	9	1986	C2	1.03	N	N
17	9	1986	D1	0.94	N	N	21	9	1986	C3	0.97	N	N
17	9	1986	D2	0.86	N	N	21	9	1986	D1	1.	N	N
17	9	1986	D3	0.94	N	N	21	9	1986	D2	0.91	N	N
18	9	1986	A1	1.	N	N	21	9	1986	D3	0.94	N	N
18	9	1986	A2	0.88	N	N	22	9	1986	A1	0.94	N	N
18	9	1986	A3	1.02	N	N	22	9	1986	A2	0.84	N	N
18	9	1986	B1	0.96	N	N	22	9	1986	A3	0.97	N	N
18	9	1986	B2	0.88	N	N	22	9	1986	B1	0.93	N	N
18	9	1986	B3	0.97	N	N	22	9	1986	B2	0.84	N	N
18	9	1986	C1	0.87	N	N	22	9	1986	B3	0.94	N	N
18	9	1986	C2	1.04	N	N	22	9	1986	C1	0.82	N	N
18	9	1986	C3	0.99	N	N	22	9	1986	C2	1.01	N	N
18	9	1986	D1	1.01	N	N	22	9	1986	C3	0.96	N	N
18	9	1986	D2	0.93	N	N	22	9	1986	D1	0.99	N	N
18	9	1986	D3	0.98	N	N	22	9	1986	D2	0.9	N	N

Table 2. Daily Pond Measurements. Ayutthaya, Thailand, Cycle III, Wet Season

DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW	DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW
22	9	1986	D3	0.94	N	N	26	9	1986	D2	0.87	N	N
23	9	1986	A1	0.94	N	N	26	9	1986	D3	0.94	N	N
23	9	1986	A2	0.83	N	N	27	9	1986	A1	0.97	N	N
23	9	1986	A3	0.96	N	N	27	9	1986	A2	0.86	N	N
23	9	1986	B1	0.93	N	N	27	9	1986	A3	0.99	N	N
23	9	1986	B2	0.82	N	N	27	9	1986	B1	0.95	N	N
23	9	1986	B3	0.92	N	N	27	9	1986	B2	0.84	N	N
23	9	1986	C1	0.8	N	N	27	9	1986	B3	0.94	N	N
23	9	1986	C2	1.01	N	N	27	9	1986	C1	0.81	N	N
23	9	1986	C3	0.95	N	N	27	9	1986	C2	1.04	N	N
23	9	1986	D1	0.98	N	N	27	9	1986	C3	0.98	N	N
23	9	1986	D2	0.89	N	N	27	9	1986	D1	1.02	N	N
23	9	1986	D3	0.94	N	N	27	9	1986	D2	0.91	N	N
24	9	1986	A1	0.93	N	N	27	9	1986	D3	0.95	N	N
24	9	1986	A2	0.82	N	N	28	9	1986	A1	0.96	N	N
24	9	1986	A3	0.96	N	N	28	9	1986	A2	0.86	N	N
24	9	1986	B1	0.92	N	N	28	9	1986	A3	0.98	N	N
24	9	1986	B2	0.81	N	N	28	9	1986	B1	0.95	N	N
24	9	1986	B3	0.91	N	N	28	9	1986	B2	0.83	N	N
24	9	1986	C1	0.79	N	N	28	9	1986	B3	0.94	N	N
24	9	1986	C2	1.	N	N	28	9	1986	C1	0.89	Y	N
24	9	1986	C3	0.94	N	N	28	9	1986	C2	1.03	N	N
24	9	1986	D1	0.98	N	N	28	9	1986	C3	0.98	N	N
24	9	1986	D2	0.88	N	N	28	9	1986	D1	1.02	N	N
24	9	1986	D3	0.94	N	N	28	9	1986	D2	0.91	N	N
25	9	1986	A1	0.92	N	N	28	9	1986	D3	0.95	N	N
25	9	1986	A2	0.81	N	N	29	9	1986	A1	1.12	N	N
25	9	1986	A3	0.95	N	N	29	9	1986	A2	1.01	N	N
25	9	1986	B1	0.91	N	N	29	9	1986	A3	1.05	N	N
25	9	1986	B2	0.8	N	N	29	9	1986	B1	1.04	N	N
25	9	1986	B3	0.9	N	N	29	9	1986	B2	0.98	N	N
25	9	1986	C1	0.78	N	N	29	9	1986	B3	1.05	N	N
25	9	1986	C2	0.99	N	N	29	9	1986	C1	1.05	N	N
25	9	1986	C3	0.94	N	N	29	9	1986	C2	1.1	N	N
25	9	1986	D1	0.97	N	N	29	9	1986	C3	1.1	N	N
25	9	1986	D2	0.87	N	N	29	9	1986	D1	1.1	N	N
25	9	1986	D3	0.94	N	N	29	9	1986	D2	1.05	N	N
26	9	1986	A1	0.92	N	N	29	9	1986	D3	1.08	N	N
26	9	1986	A2	0.81	N	N	30	9	1986	A1	1.	N	N
26	9	1986	A3	0.95	N	N	30	9	1986	A2	1.	N	N
26	9	1986	B1	0.91	N	N	30	9	1986	A3	1.	N	N
26	9	1986	B2	0.8	N	N	30	9	1986	B1	0.98	N	N
26	9	1986	B3	0.9	N	N	30	9	1986	B2	0.95	N	N
26	9	1986	C1	0.78	N	N	30	9	1986	B3	1.07	N	N
26	9	1986	C2	0.99	N	N	30	9	1986	C1	1.03	N	N
26	9	1986	C3	0.94	N	N	30	9	1986	C2	1.1	N	N
26	9	1986	D1	0.98	N	N	30	9	1986	C3	1.1	N	N

Table 2. Daily Pond Measurements. Ayutthaya, Thailand, Cycle III, Wet Season

DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW	DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW
26	10	1986	B1	0.94	N	N	30	10	1986	A3	0.98	N	N
26	10	1986	B2	0.81	N	N	30	10	1986	B1	0.93	N	N
26	10	1986	B3	0.94	N	N	30	10	1986	B2	0.92	Y	N
26	10	1986	C1	0.87	N	N	30	10	1986	B3	0.92	N	N
26	10	1986	C2	0.75	N	Y	30	10	1986	C1	0.94	Y	N
26	10	1986	C3	0.92	N	N	30	10	1986	C2	1.1	Y	N
26	10	1986	D1	0.98	N	N	30	10	1986	C3	0.92	N	N
26	10	1986	D2	0.93	N	N	30	10	1986	D1	0.97	N	N
26	10	1986	D3	0.96	N	N	30	10	1986	D2	0.91	N	N
27	10	1986	A1	0.93	N	N	30	10	1986	D3	0.96	N	N
27	10	1986	A2	0.85	N	N	31	10	1986	A1	0.92	N	N
27	10	1986	A3	0.97	N	N	31	10	1986	A2	0.9	N	N
27	10	1986	B1	0.93	N	N	31	10	1986	A3	0.97	N	N
27	10	1986	B2	0.81	N	N	31	10	1986	B1	0.92	N	N
27	10	1986	B3	0.94	N	N	31	10	1986	B2	0.9	N	N
27	10	1986	C1	0.85	N	N	31	10	1986	B3	0.91	N	N
27	10	1986	C2	0.74	N	Y	31	10	1986	C1	0.92	N	N
27	10	1986	C3	0.92	N	N	31	10	1986	C2	1.07	N	N
27	10	1986	D1	0.97	N	N	31	10	1986	C3	0.91	N	N
27	10	1986	D2	0.92	N	N	31	10	1986	D1	0.97	N	N
27	10	1986	D3	0.96	N	N	31	10	1986	D2	0.91	N	N
28	10	1986	A1	0.92	N	N	31	10	1986	D3	0.96	N	N
28	10	1986	A2	0.84	N	N	1	11	1986	A1	0.915	N	N
28	10	1986	A3	0.97	N	N	1	11	1986	A2	0.9	N	N
28	10	1986	B1	0.92	N	N	1	11	1986	A3	0.96	N	N
28	10	1986	B2	0.81	N	N	1	11	1986	B1	0.91	N	N
28	10	1986	B3	0.92	N	N	1	11	1986	B2	0.87	N	N
28	10	1986	C1	0.84	Y	N	1	11	1986	B3	0.91	N	N
28	10	1986	C2	0.7	N	Y	1	11	1986	C1	0.9	N	N
28	10	1986	C3	0.92	N	N	1	11	1986	C2	1.05	N	N
28	10	1986	D1	0.97	N	N	1	11	1986	C3	0.91	N	N
28	10	1986	D2	0.92	N	N	1	11	1986	D1	0.96	N	N
28	10	1986	D3	0.96	N	N	1	11	1986	D2	0.89	N	N
29	10	1986	A1	0.92	N	N	1	11	1986	D3	0.95	N	N
29	10	1986	A2	0.83	N	N	2	11	1986	A1	0.9	N	N
29	10	1986	A3	0.96	N	N	2	11	1986	A2	0.88	N	N
29	10	1986	B1	0.91	N	N	2	11	1986	A3	0.96	N	N
29	10	1986	B2	0.79	N	N	2	11	1986	B1	0.9	N	N
29	10	1986	B3	0.91	N	N	2	11	1986	B2	0.87	N	N
29	10	1986	C1	0.83	N	N	2	11	1986	B3	0.9	N	N
29	10	1986	C2	0.69	N	Y	2	11	1986	C1	0.89	N	N
29	10	1986	C3	0.91	N	N	2	11	1986	C2	1.03	N	N
29	10	1986	D1	0.96	N	N	2	11	1986	C3	0.9	N	N
29	10	1986	D2	0.9	N	N	2	11	1986	D1	0.96	N	N
29	10	1986	D3	0.95	N	N	2	11	1986	D2	0.89	N	N
30	10	1986	A1	0.93	N	N	2	11	1986	D3	0.95	N	N
30	10	1986	A2	0.92	Y	N	3	11	1986	A1	0.9	N	N

Table 2. Daily Pond Measurements. Ayutthaya, Thailand, Cycle III, Wet Season

DAY	MONTH	YEAR	POND#	DEPTH	INFLOW	OVERFLOW
27	12	1986	D3	0.89	N	N
28	12	1986	A1	0.87	N	N
28	12	1986	A2	0.84	N	N
28	12	1986	A3	0.87	N	N
28	12	1986	B1	0.87	N	N
28	12	1986	B2	0.85	N	N
28	12	1986	B3	0.86	N	N
28	12	1986	C1	0.84	N	N
28	12	1986	C2	0.84	N	N
28	12	1986	C3	0.87	N	N
28	12	1986	D1	0.86	N	N
28	12	1986	D2	0.85	N	N
28	12	1986	D3	0.88	N	N

Table 4. Diurnal Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

D.O.				WATER			WATER			WATER	
DAY	MONTH	YEAR	TIME	POND#	DO-TOP	DO-MID	DO-BOT	TEMP	TEMP	TEMP	PH
								TOP	MID	BOT	
11	2	1968	530	B1	10.4	10.3	10.3	27.	27.	27.	8.6
11	2	1968	930	A3	5.8	4.8	4.5	25.2	25.2	25.2	8.4
11	2	1968	930	B1	11.82	11.2	10.4	27.	27.	27.	8.9
11	2	1968	1400	A3	10.	9.7	8.8	30.2	30.	28.8	8.7
11	2	1968	1400	B1	20.	20.	14.6	30.8	29.	27.5	9.4
11	2	1968	1900	A3	8.75	8.7	8.1	28.8	28.8	28.8	8.5
11	2	1968	1900	B1	20.	19.8	19.	29.	29.	28.5	9.4
11	2	1968	2400	A3	5.9	5.9	5.8	28.	28.	28.	8.3
11	2	1968	2400	B1	15.2	15.	14.9	28.	28.	28.	9.1
12	2	1968	400	A3	4.5	4.5	4.5	26.5	26.5	26.5	8.
12	2	1968	400	B1	13.5	13.3	13.2	27.	27.	27.	9.
11	2	1986	400	D1	4.7	4.7	4.7	26.5	26.5	26.5	8.8
11	2	1986	530	A1	6.3	6.2	6.	27.	27.	27.	8.1
11	2	1986	530	A1	7.5	7.1	6.4	26.8	26.8	26.5	8.4
11	2	1986	530	A2	6.	5.9	5.9	26.5	26.5	26.5	7.8
11	2	1986	530	A3	4.7	4.7	4.7	26.5	26.5	26.5	8.2
11	2	1986	530	B2	7.2	7.1	7.	27.	27.	27.	8.
11	2	1986	530	B3	5.7	5.6	5.5	26.5	26.5	26.5	8.2
11	2	1986	530	C1	3.5	3.5	3.5	27.	27.	27.	8.2
11	2	1986	530	C2	5.9	5.9	5.8	26.5	26.5	26.5	7.8
11	2	1986	530	C3	5.3	5.3	5.	27.	27.	27.	8.
11	2	1986	530	D1	5.	5.	4.9	26.5	26.5	26.5	8.9
11	2	1986	530	D2	6.8	6.7	6.7	27.	27.	27.	8.4
11	2	1986	530	D3	4.1	4.1	4.1	26.5	26.5	26.5	7.9
11	2	1986	930	A2	8.7	5.8	5.4	26.8	26.5	26.	8.6
11	2	1986	930	B2	8.	7.9	7.1	26.8	26.8	26.5	8.3
11	2	1986	930	B3	7.5	6.4	4.9	27.	26.5	26.	8.5
11	2	1986	930	C1	4.2	3.8	3.8	27.	27.	26.8	8.3
11	2	1986	930	C2	8.4	6.4	4.7	26.5	26.	25.8	8.7
11	2	1986	930	C3	6.1	5.9	5.1	27.	26.8	26.8	8.3
11	2	1986	930	D1	6.6	5.6	4.5	28.	26.	26.	9.
11	2	1986	930	D2	7.1	6.6	6.4	26.5	26.2	26.2	8.5
11	2	1986	930	D3	4.8	4.	2.9	26.8	26.2	26.2	8.1
11	2	1986	1400	A1	14.	14.	12.6	30.	29.5	28.	8.9
11	2	1986	1400	A2	20.	19.8	7.6	30.8	29.	26.8	9.3
11	2	1986	1400	B2	19.7	13.7	12.6	30.	29.5	29.	9.4
11	2	1986	1400	B3	14.1	15.8	7.8	30.2	28.8	27.	8.9
11	2	1986	1400	C1	10.4	10.4	9.7	30.	29.5	28.2	8.8
11	2	1986	1400	C2	17.4	17.4	11.	31.2	29.8	27.	9.6
11	2	1986	1400	C3	11.4	11.4	8.9	30.5	29.5	27.8	8.7
11	2	1986	1400	D1	13.3	14.4	4.2	30.5	29.2	27.	9.2
11	2	1986	1400	D2	10.2	10.6	10.3	30.	29.5	28.5	8.7
11	2	1986	1400	D3	9.	7.7	4.7	30.5	30.	28.	8.6
11	2	1986	1900	A1	13.4	13.	12.9	29.	29.	29.	8.9

Table 4. Diurnal Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	D.O.	TIME	POND#	D.O.			WATER TEMP			PH
						DO-TOP	DO-MID	DO-BOT	TOP	MID	BOT	
11	2	1986	1900	A2		15.8	15.2	7.8	29.	29.	29.	9.
11	2	1986	1900	B2		16.	16.	15.8	29.	29.	29.	9.
11	2	1986	1900	B3		12.6	12.6	6.4	29.	29.	28.	8.9
11	2	1986	1900	C1		8.2	9.2	8.9	29.5	29.5	29.5	8.8
11	2	1986	1900	C2		15.8	15.2	7.8	29.	29.	27.8	9.2
11	2	1986	1900	C3		10.	9.8	8.	29.5	29.5	29.5	8.7
11	2	1986	1900	D1		11.8	11.8	6.	29.	28.5	28.	9.2
11	2	1986	1900	D2		9.4	9.3	9.	29.5	29.5	29.5	8.7
11	2	1986	1900	D3		8.	7.9	4.1	29.	29.	28.5	8.4
11	2	1986	2400	A1		9.9	9.8	9.6	28.	28.	28.	8.6
11	2	1986	2400	A2		10.8	10.7	10.8	27.5	27.5	27.5	8.6
11	2	1986	2400	B2		10.6	10.5	10.4	28.	28.	28.	8.6
11	2	1986	2400	B3		9.	8.8	8.1	28.	28.	28.	8.7
11	2	1986	2400	C1		6.4	6.4	6.3	28.	28.	28.	8.5
11	2	1986	2400	C2		9.8	9.7	5.6	27.5	27.5	27.5	8.6
11	2	1986	2400	C3		6.7	6.7	6.6	28.	28.	28.	8.3
11	2	1986	2400	D1		7.7	7.7	6.1	27.5	27.5	27.5	9.
11	2	1986	2400	D2		7.3	7.2	7.1	28.	28.	28.	8.5
11	2	1986	2400	D3		5.1	5.	4.9	27.5	27.5	27.5	8.
12	2	1986	400	A1		7.8	7.7	7.6	27.	27.	27.	8.
12	2	1986	400	A2		7.3	7.2	7.2	26.5	26.5	26.5	7.8
12	2	1986	400	B2		8.2	8.	7.9	27.	27.	27.	8.1
12	2	1986	400	B3		6.2	6.1	6.	26.5	26.5	26.5	8.1
12	2	1986	400	C1		5.	4.9	4.9	27.	27.	27.	8.2
12	2	1986	400	C2		6.8	6.7	6.6	26.	26.	26.	7.8
12	2	1986	400	C3		5.5	5.5	5.4	27.	27.	27.	8.
12	2	1986	400	D2		6.7	6.7	6.6	27.	27.	27.	8.3
12	2	1986	400	D3		4.4	4.4	4.4	26.5	26.5	26.5	7.9
11	3	1986	530	A1		5.5	5.4	5.3	28.	28.	28.	8.3
11	3	1986	530	A2		6.	5.9	5.8	27.5	27.5	27.5	8.4
11	3	1986	530	A3		4.7	4.5	4.4	27.	27.	27.	8.2
11	3	1986	530	B1		4.5	4.6	4.6	27.5	27.5	27.5	8.
11	3	1986	530	B2		4.8	4.7	4.6	28.	28.	28.	8.1
11	3	1986	530	B3		2.7	2.5	2.4	27.	27.	27.	7.9
11	3	1986	530	C1		4.5	4.5	4.5	28.	28.	28.	8.1
11	3	1986	530	C2		4.1	4.	4.	27.5	27.5	27.5	8.8
11	3	1986	530	C3		4.4	4.3	4.1	28.	28.	28.	8.1
11	3	1986	530	D1		4.5	4.5	4.5	27.5	27.5	27.5	8.7
11	3	1986	530	D2		5.6	5.5	5.4	28.	28.	28.	8.2
11	3	1986	530	D3		3.1	3.1	3.	27.	27.	27.	7.9
11	3	1986	930	A1		5.8	5.7	4.9	28.	28.	27.5	8.4
11	3	1986	930	A2		8.8	5.7	5.5	28.	27.5	27.5	8.9
11	3	1986	930	A3		6.3	4.8	3.7	28.	27.5	27.	8.3
11	3	1986	930	B1		4.9	4.5	3.8	28.	27.5	27.5	8.1
11	3	1986	930	B2		4.9	4.6	4.4	28.	28.	28.	8.1

Table 4. Diurnal Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	D.O.			WATER TEMP			PH		
			TIME	POND#	DO-TOP	DO-MID	DO-BOT	TOP		MID	BOT
11	3	1986	930	B3	4.2	2.5	1.7	27.	27.	27.	8.
11	3	1986	930	C1	5.	4.9	4.3	28.	28.	28.	8.1
11	3	1986	930	C2	6.4	4.5	3.1	28.	28.	27.	8.8
11	3	1986	930	C3	5.	4.7	3.9	28.	28.	27.5	8.1
11	3	1986	930	D1	5.3	4.6	3.6	28.	27.5	27.5	8.7
11	3	1986	930	D2	6.	5.4	4.9	28.	28.	27.5	8.6
11	3	1986	930	D3	3.9	3.2	2.	27.5	27.5	27.	7.9
11	3	1986	1400	A1	9.8	9.2	6.9	32.	30.5	28.5	8.6
11	3	1986	1400	A2	15.6	12.6	8.8	32.	30.	28.5	9.5
11	3	1986	1400	A3	11.6	10.4	4.	32.	30.	28.	8.7
11	3	1986	1400	B1	9.7	8.7	6.5	32.	30.5	28.5	8.5
11	3	1986	1400	B2	8.6	8.1	7.4	32.	30.5	29.5	8.4
11	3	1986	1400	B3	10.3	7.6	2.9	32.	30.	28.5	8.6
11	3	1986	1400	C1	9.3	8.5	6.2	32.	31.	29.	8.5
11	3	1986	1400	C2	15.6	11.	6.6	32.	30.	28.5	9.3
11	3	1986	1400	C3	9.6	9.1	7.4	32.	31.	29.	8.5
11	3	1986	1400	D1	11.	9.3	6.	32.	30.5	29.	9.
11	3	1986	1400	D2	10.3	10.6	7.	32.	31.	28.5	8.9
11	3	1986	1400	D3	9.5	6.8	2.4	32.	29.5	28.	8.4
11	3	1986	1900	A1	8.8	8.5	7.8	30.	30.	30.	8.6
11	3	1986	1900	A2	14.6	13.6	9.	30.	30.	29.	9.5
11	3	1986	1900	A3	9.5	8.7	6.3	30.	30.	28.5	8.9
11	3	1986	1900	B1	8.7	8.3	7.	30.5	30.	29.5	8.6
11	3	1986	1900	B2	8.	7.9	6.9	30.5	30.5	30.	8.5
11	3	1986	1900	B3	7.4	6.9	5.2	30.	30.	29.	8.4
11	3	1986	1900	C1	8.9	8.3	6.7	30.	30.	30.	8.6
11	3	1986	1900	C2	12.	10.8	6.9	30.	30.	29.	9.3
11	3	1986	1900	C3	9.	9.	5.4	30.	30.	29.	8.6
11	3	1986	1900	D1	8.9	8.7	7.3	30.	30.	29.	9.
11	3	1986	1900	D2	9.7	9.2	4.7	30.5	30.5	30.5	9.
11	3	1986	1900	D3	7.	6.3	4.4	30.	30.	29.	8.4
11	3	1986	2400	A1	6.3	6.3	6.3	29.	29.	29.	8.4
11	3	1986	2400	A2	7.9	7.9	7.8	29.	29.	29.	8.9
11	3	1986	2400	A3	6.	5.9	5.9	28.2	28.2	28.2	8.6
11	3	1986	2400	B1	5.4	5.4	5.4	29.	29.	29.	8.2
11	3	1986	2400	B2	5.7	5.7	5.7	29.	29.	29.	8.2
11	3	1986	2400	B3	4.2	4.2	4.2	28.5	28.5	28.5	8.
11	3	1986	2400	C1	6.	6.	6.	29.	29.	29.	8.3
11	3	1986	2400	C2	6.	6.	6.	28.8	28.8	28.8	8.9
11	3	1986	2400	C3	5.7	5.7	5.5	29.	29.	29.	8.3
11	3	1986	2400	D1	5.	5.	5.	29.	29.	29.	8.7
11	3	1986	2400	D2	6.3	6.1	6.	29.	29.	29.	8.7
11	3	1986	2400	D3	3.7	3.7	3.5	28.5	28.5	28.5	8.
12	3	1986	400	A1	5.4	5.4	5.4	28.	28.	28.	8.2
12	3	1986	400	A2	4.6	4.6	4.6	28.	28.	28.	8.

Table 4. Diurnal Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	D.O. TIME	POND#	DO-TOP	DO-MID	DO-BOT	WATER TEMP			PH
								TOP	MID	BOT	
12	3	1986	400 A3	4.4	4.4	4.4	27.	27.	27.	8.2	
12	3	1986	400 B1	4.5	4.5	4.5	28.	28.	28.	8.1	
12	3	1986	400 B2	4.7	4.7	4.7	28.5	28.5	28.5	8.	
12	3	1986	400 B3	2.5	2.5	2.5	28.	28.	28.	7.8	
12	3	1986	400 C1	4.5	4.5	4.5	28.	28.	28.	8.5	
12	3	1986	400 C2	3.7	3.7	3.7	27.5	27.5	27.5	8.7	
12	3	1986	400 C3	4.6	4.6	4.6	28.	28.	28.	8.1	
12	3	1986	400 D1	3.6	3.6	3.6	28.	28.	28.	8.6	
12	3	1986	400 D2	5.	5.	5.	28.	28.	28.	8.5	
12	3	1986	400 D3	3.	3.	3.	27.5	27.5	27.5	7.82	
15	4	1986	400 A1	7.7	7.7	7.7	30.2	30.2	30.2	8.9	
15	4	1986	400 A2	6.8	6.8	6.7	31.	31.	31.	9.	
15	4	1986	400 A3	4.1	4.1	4.1	30.	30.	30.	8.3	
15	4	1986	400 B1	5.2	5.2	5.2	30.	30.	30.	8.6	
15	4	1986	400 B2	6.8	6.7	6.7	31.	31.	31.	9.	
15	4	1986	400 B3	3.	3.	2.9	30.5	30.5	30.5	7.9	
15	4	1986	400 C1	4.9	4.8	4.7	31.	31.	31.	8.5	
15	4	1986	400 C2	5.9	5.9	5.9	30.	30.	30.	9.2	
15	4	1986	400 C3	6.2	6.2	6.1	31.	31.	31.	8.9	
15	4	1986	400 D1	4.5	4.5	4.4	30.	30.	30.	9.	
15	4	1986	530 A1	6.	5.9	5.9	29.5	29.5	29.5	8.6	
15	4	1986	530 A2	5.9	6.	6.	30.	30.	30.	8.6	
15	4	1986	530 A3	3.4	3.4	3.4	29.	29.	29.	8.	
15	4	1986	530 B1	4.6	4.6	4.6	29.5	29.5	29.5	8.5	
15	4	1986	530 B2	5.4	5.4	5.4	30.	30.	30.	8.6	
15	4	1986	530 B3	2.4	2.4	2.4	29.	29.	29.	7.7	
15	4	1986	530 C1	3.9	3.9	3.9	30.	30.	30.	8.1	
15	4	1986	530 C2	4.7	4.7	4.7	29.	29.	29.	8.9	
15	4	1986	530 C3	5.4	5.4	5.4	30.	30.	30.	8.7	
15	4	1986	530 D1	3.4	3.4	3.4	29.5	29.5	29.5	8.8	
15	4	1986	930 A1	8.4	8.3	6.5	30.5	30.	29.5	8.9	
15	4	1986	930 A2	8.7	8.7	6.9	31.	30.	29.5	9.1	
15	4	1986	930 A3	7.1	5.1	3.1	31.	29.5	29.	8.4	
15	4	1986	930 B1	6.6	5.4	4.3	30.5	30.	29.5	8.9	
15	4	1986	930 B2	8.5	7.6	5.9	31.	30.	30.	8.9	
15	4	1986	930 B3	5.3	3.1	1.9	31.	29.5	29.	8.1	
15	4	1986	930 C1	6.4	4.8	2.9	31.	29.5	29.	8.5	
15	4	1986	930 C2	11.5	9.1	6.2	31.	30.	29.	9.2	
15	4	1986	930 C3	8.3	7.2	5.3	31.	30.	30.	9.	
15	4	1986	930 D1	7.4	4.5	3.1	31.	29.5	29.	8.9	
15	4	1986	1400 A1	12.6	14.4	11.6	35.5	32.	30.5	9.1	
15	4	1986	1400 A2	12.8	15.	12.8	35.	32.	31.	9.4	
15	4	1986	1400 A3	11.2	11.6	4.	36.	31.	29.5	8.8	
15	4	1986	1400 B1	11.6	12.	7.	35.5	31.5	30.	9.1	
15	4	1986	1400 B2	12.6	14.6	13.4	35.5	32.	32.	9.3	

Table 4. Diurnal Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	TIME	POND#	D.O.			WATER TEMP			PH
					DO-TOP	DO-MID	DO-BOT	TOP	MID	BOT	
15	4	1986	1400	B3	10.2	8.5	3.	36.	32.	30.	8.6
15	4	1986	1400	C1	10.6	11.4	6.1	35.	32.	30.5	8.8
15	4	1986	1400	C2	20.	20.	8.4	36.	32.	30.	9.5
15	4	1986	1400	C3	13.2	15.6	9.4	35.5	32.5	31.	9.4
15	4	1986	1400	D1	13.6	12.8	5.	35.5	32.	30.	9.2
15	4	1986	1900	A1	13.9	14.5	10.	33.	33.	32.	9.3
15	4	1986	1900	A2	13.4	13.4	12.2	33.	33.	33.	9.5
15	4	1986	1900	A3	10.2	10.2	5.1	32.5	32.5	31.	8.9
15	4	1986	1900	B1	11.	10.8	5.4	33.	33.	31.	9.2
15	4	1986	1900	B2	12.8	13.	9.6	33.	33.	33.	9.3
15	4	1986	1900	B3	8.1	7.2	5.	33.	32.5	32.	8.6
15	4	1986	1900	C1	10.4	9.6	5.5	33.	33.	32.	9.
15	4	1986	1900	C2	15.	13.2	7.9	33.	33.	31.	9.6
15	4	1986	1900	C3	13.5	13.4	9.9	33.	33.	32.	9.2
15	4	1986	1900	D1	12.	11.	4.9	33.	33.	31.	9.3
15	4	1986	2400	A1	8.7	8.4	7.8	31.	31.	31.	9.
15	4	1986	2400	A2	8.6	8.6	8.6	31.5	31.5	31.5	9.1
15	4	1986	2400	A3	5.6	5.6	5.6	30.5	30.5	30.5	8.5
15	4	1986	2400	B1	6.5	6.5	6.5	31.	31.	31.	9.
15	4	1986	2400	B2	8.2	8.1	8.1	31.5	31.5	31.5	9.1
15	4	1986	2400	B3	4.1	4.1	4.1	30.5	30.5	30.5	8.2
15	4	1986	2400	C1	6.2	6.2	6.2	31.	31.	31.	8.7
15	4	1986	2400	C2	8.1	8.1	8.1	30.5	30.5	30.5	9.4
15	4	1986	2400	C3	8.	8.	8.	31.	31.	31.	9.
15	4	1986	2400	D1	5.6	5.6	5.6	30.5	30.5	30.5	9.1
16	4	1986	400	D2	4.	4.	3.9	31.	31.	31.	8.5
16	4	1986	400	D3	3.3	3.2	3.2	30.5	30.5	30.5	8.2
16	4	1986	530	D2	3.5	3.5	3.4	30.	30.	30.	8.3
16	4	1986	530	D3	2.8	2.8	2.9	29.	29.	29.	7.9
16	4	1986	930	D2	5.6	4.	2.2	30.	29.	28.5	8.5
16	4	1986	930	D3	6.7	4.1	2.2	31.	29.5	29.	8.3
16	4	1986	1400	D2	9.4	9.6	4.9	36.	32.5	31.	8.9
16	4	1986	1400	D3	12.2	11.8	3.3	35.5	32.	30.	8.7
16	4	1986	1900	D2	9.3	8.8	6.7	33.	33.	32.	8.9
16	4	1986	1900	D3	10.4	9.2	3.6	33.	33.	31.	8.8
16	4	1986	2400	D2	5.2	5.2	5.2	31.	31.	31.	8.7
16	4	1986	2400	D3	5.1	5.1	5.1	30.5	30.5	30.5	8.5
13	5	1986	400	A1	4.75	4.85	4.85	29.5	29.5	29.5	9.1
13	5	1986	400	A2	5.75	5.75	5.8	30.	30.	30.	8.9
13	5	1986	400	A3	3.6	3.6	3.6	29.5	29.5	29.5	8.8
13	5	1986	400	B1	5.6	5.65	5.6	30.	30.	30.	8.65
13	5	1986	400	B2	4.5	4.5	4.5	29.5	29.5	29.5	8.6
13	5	1986	400	B3	2.6	2.65	2.7	29.	29.	29.	8.
13	5	1986	400	C1	3.85	3.85	3.95	29.	29.	29.	8.4
13	5	1986	400	C2	4.55	4.55	4.6	29.5	29.5	29.5	8.95

Table 4. Diurnal Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	D.O. TIME	POND#	DO-TOP	DO-MID	DO-BOT	WATER	WATER	WATER	PH
								TEMP TOP	TEMP MID	TEMP BOT	
13	5	1986	400 C3		5.35	5.35	5.3	30.	30.	30.	8.9
13	5	1986	400 D1		4.	4.	4.	29.5	29.5	29.5	9.
13	5	1986	530 A1		5.85	5.8	5.8	29.5	30.	31.	9.1
13	5	1986	530 A2		5.75	5.75	5.75	30.	30.	30.	8.7
13	5	1986	530 A3		3.9	3.9	3.9	29.5	29.5	29.5	8.3
13	5	1986	530 B1		5.8	5.3	5.8	30.	30.	30.	8.4
13	5	1986	530 B2		4.5	4.5	4.5	29.5	29.5	29.5	8.5
13	5	1986	530 B3		2.75	2.75	2.75	29.5	29.5	29.5	8.
13	5	1986	530 C1		3.85	3.85	3.85	29.5	29.5	29.5	8.5
13	5	1986	530 C2		5.4	5.4	5.4	30.	30.	30.	8.9
13	5	1986	530 C3		5.05	5.05	5.05	30.	30.	30.	8.7
13	5	1986	530 D1		4.4	4.4	4.4	30.	30.	30.	8.9
13	5	1986	930 A1		8.1	8.	7.7	30.5	31.	31.	9.15
13	5	1986	930 A2		8.8	8.7	8.4	31.	30.5	30.	9.
13	5	1986	930 A3		7.9	7.3	6.	31.	30.5	30.	8.7
13	5	1986	930 B1		8.8	8.5	8.	30.5	30.	30.	8.7
13	5	1986	930 B2		7.1	6.9	6.3	31.	30.5	30.	8.7
13	5	1986	930 B3		6.1	5.	3.3	30.5	30.	30.	8.4
13	5	1986	930 C1		7.1	6.8	5.3	31.	30.5	30.	8.8
13	5	1986	930 C2		9.4	9.1	7.5	31.	30.5	30.	9.1
13	5	1986	930 C3		8.2	8.	7.7	30.5	30.5	30.	9.
13	5	1986	930 D1		8.4	8.2	7.2	31.	30.5	30.	9.
13	5	1986	1400 A1		11.4	11.6	10.8	34.	33.5	31.	9.3
13	5	1986	1400 A2		10.2	10.8	10.8	33.	33.	32.	9.15
13	5	1986	1400 A3		11.	8.3	5.3	32.	31.	30.	9.1
13	5	1986	1400 B1		11.	12.	11.8	33.	33.	32.	9.
13	5	1986	1400 B2		8.5	8.5	8.4	33.5	32.5	31.5	8.9
13	5	1986	1400 B3		9.5	8.	5.8	33.	32.	31.	8.9
13	5	1986	1400 C1		9.6	9.4	7.7	33.	32.	31.	9.
13	5	1986	1400 C2		12.8	10.4	8.5	32.	31.5	30.	9.4
13	5	1986	1400 C3		11.	11.2	10.2	33.	33.	31.	9.2
13	5	1986	1400 D1		10.	9.2	8.4	33.	32.	31.	9.2
13	5	1986	1900 A1		11.2	10.5	7.95	32.	32.	31.	9.35
13	5	1986	1900 A2		10.2	9.9	9.7	32.	32.	32.	9.25
13	5	1986	1900 A3		8.8	7.7	6.8	31.	31.	31.	9.
13	5	1986	1900 B1		11.2	11.	10.9	32.	32.	32.	9.05
13	5	1986	1900 B2		8.2	8.1	7.	32.	32.	32.	9.
13	5	1986	1900 B3		7.5	7.2	3.9	31.	31.	31.	8.8
13	5	1986	1900 C1		8.5	8.4	6.9	32.	32.	31.	9.05
13	5	1986	1900 C2		10.4	9.9	9.2	31.	31.	31.	9.3
13	5	1986	1900 C3		10.8	10.7	10.5	32.	32.	32.	9.25
13	5	1986	1900 D1		11.6	11.2	11.	32.	32.	32.	9.3
13	5	1986	2400 A1		6.6	6.5	6.5	30.	30.	30.	9.1
13	5	1986	2400 A2		7.4	7.35	7.35	30.	30.	30.	9.1
13	5	1986	2400 A3		5.3	5.25	5.2	30.	30.	30.	8.6

Table 4. Diurnal Measurements. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	D.O.			WATER TEMP			PH		
			TIME	POND#	DO-TOP	DO-MID	DO-BOT	TOP		MID	BOT
13	5	1986	2400	B1	7.35	7.3	7.2	30.	30.	30.	8.8
13	5	1986	2400	B2	5.7	5.7	5.65	30.	30.	30.	8.8
13	5	1986	2400	B3	4.3	4.25	4.25	29.5	29.5	29.5	8.3
13	5	1986	2400	C1	5.3	5.3	5.3	30.	30.	30.	8.75
13	5	1986	2400	C2	6.6	6.6	6.6	30.	30.	30.	9.1
13	5	1986	2400	C3	7.2	7.2	7.1	30.	30.	30.	9.1
13	5	1986	2400	D1	6.5	6.5	6.5	30.	30.	30.	9.15
14	5	1986	400	D2	3.45	3.5	3.5	28.5	29.5	29.5	8.35
14	5	1986	400	D3	2.35	2.35	2.35	29.	29.	29.	7.95
14	5	1986	530	D2	3.2	3.2	3.2	29.5	29.5	29.5	8.4
14	5	1986	530	D3	2.1	2.1	2.1	29.5	29.5	29.5	8.1
14	5	1986	930	D2	6.6	6.3	5.6	31.	30.	30.	8.65
14	5	1986	930	D3	7.2	6.6	4.6	30.5	30.5	30.	8.5
14	5	1986	1400	D2	8.5	8.3	7.1	33.	32.	30.	8.9
14	5	1986	1400	D3	10.2	9.7	7.7	33.	31.5	30.5	8.8
14	5	1986	1900	D2	8.2	7.5	6.5	31.5	31.5	31.	9.
14	5	1986	1900	D3	8.	8.	5.7	31.	31.	30.5	8.75
14	5	1986	2400	D2	4.85	4.9	4.9	30.	30.	30.	8.6
14	5	1986	2400	D3	4.05	4.1	4.1	29.5	30.	30.	8.25
17	6	1986	530	A1	3.5	3.4	3.4	30.2	30.2	30.2	8.8
17	6	1986	530	A2	5.5	5.5	5.4	31.	31.	31.	8.5
17	6	1986	530	A3	3.1	3.1	3.1	31.	31.	31.	7.7
17	6	1986	530	B1	5.5	5.4	5.4	30.2	30.2	30.2	8.7
17	6	1986	530	B2	3.4	3.4	3.3	31.	31.	31.	8.2
17	6	1986	530	B3	2.7	2.7	2.5	30.5	30.5	30.5	7.8
17	6	1986	530	C1	7.1	7.1	7.	32.	32.	32.	9.
17	6	1986	530	C2	3.5	3.4	3.4	31.	31.	31.	8.4
17	6	1986	530	C3	9.2	9.	9.	30.5	30.5	30.5	9.
17	6	1986	530	D1	4.1	4.	4.	30.8	30.8	30.8	8.7
17	6	1986	930	A1	6.3	4.5	2.5	31.	30.	30.	9.
17	6	1986	930	A2	8.8	5.9	5.4	31.	31.	30.5	8.9
17	6	1986	930	A3	6.	4.2	3.7	31.5	31.	31.	8.
17	6	1986	930	B1	8.5	6.1	5.4	31.	30.5	30.5	8.9
17	6	1986	930	B2	5.7	4.4	2.8	31.	31.	30.5	8.5
17	6	1986	930	B3	5.8	3.2	2.3	31.	31.	30.5	8.2
17	6	1986	930	C1	9.3	7.7	6.8	32.	31.5	31.5	9.2
17	6	1986	930	C2	6.8	5.2	4.1	31.5	31.	31.	8.7
17	6	1986	930	C3	12.8	12.	10.8	31.	31.	30.	9.4
17	6	1986	930	D1	9.8	5.5	4.4	31.5	31.	31.	8.9
17	6	1986	1400	A1	14.2	7.5	4.	36.	33.	31.	9.1
17	6	1986	1400	A2	14.	13.	11.2	36.	34.	33.	9.3
17	6	1986	1400	A3	12.	12.	9.	36.	34.5	32.5	8.7
17	6	1986	1400	B1	14.	12.1	9.3	36.	33.	32.	9.2
17	6	1986	1400	B2	12.8	9.6	7.4	36.	33.5	32.5	8.9
17	6	1986	1400	B3	11.8	7.8	3.7	36.	33.5	31.5	8.7

Table 5. Fish/Shrimp Stocking, Sampling, and Harvesting. Ayutthaya, Thailand, Cycle III, Dry Season

DAY	MONTH	YEAR	POND	ACTIVITY	SPECIES	POP. WEIGHT	POP. NUMBER	SAMPLE WEIGHT	SAMPLE WT.-#	SAMPLE WT.-SD	SAMPLE LENGTH	SAMPLE LT.-#	SAMPLE LT.-SD	REPROD. WEIGHT	REPROD. NUMBER
6	5	1986	D1	SAM	nil			182.5	22	26.8	21.5	22	1.1	7.5	
6	5	1986	D2	SAM	nil			180.	22	17.4	20.6	22	0.8	3.8	
6	5	1986	D3	SAM	nil			182.3	22	17.4	21.3	22	0.7	0.5	
6	6	1986	A1	SAM	nil			145.5	22	23.9	20.34	22	1.12	3.6	
6	6	1986	A2	SAM	nil			220.9	22	24.8	23.13	22	1.36	3.	
6	6	1986	A3	SAM	nil			211.8	22	41.3	22.04	22	1.26	0.5	
6	6	1986	B1	SAM	nil			206.8	22	29.9	22.13	22	1.17	7.2	
6	6	1986	B2	SAM	nil			216.8	22	38.9	22.1	22	1.17	6.8	
6	6	1986	B3	SAM	nil			193.2	22	23.1	21.94	22	0.65	3.3	
6	6	1986	C1	SAM	nil			214.1	22	34.9	22.1	22	1.36	10.4	
6	6	1986	C2	SAM	nil			288.2	22	42.8	25.01	22	1.47	11.4	
6	6	1986	C3	SAM	nil			245.5	22	47.9	23.56	22	1.51	8.8	
6	6	1986	D1	SAM	nil			211.8	22	33.4	23.	22	1.18	10.6	
6	6	1986	D2	SAM	nil			204.3	22	29.1	21.84	22	1.02	6.7	
6	6	1986	D3	SAM	nil			245.	22	33.6	23.14	22	0.99	0.6	
7	7	1986	A1	HAR	nil	26.9	195	168.6	22	25.3	21.4	22	0.84	7.7	
7	7	1986	A2	HAR	nil	46.1	214	243.	22	43.9	24.3	22	1.17	16.4	
7	7	1986	A3	HAR	nil	50.8	219	255.7	22	46.6	24.5	22	1.44	0.8	
7	7	1986	B1	HAR	nil	41.8	209	214.3	22	27.3	23.2	22	0.93	9.	
7	7	1986	B2	HAR	nil	37.5	197	217.	22	36.2	22.8	22	1.42	13.2	
7	7	1986	B3	HAR	nil	32.5	186	192.7	22	30.2	22.	22	1.1	4.1	
7	7	1986	C1	HAR	nil	44.3	205	251.6	22	31.	23.7	22	1.13	16.9	
7	7	1986	C2	HAR	nil	58.7	211	282.	22	40.2	25.4	22	1.13	14.	
7	7	1986	C3	HAR	nil	53.8	197	308.9	22	53.3	25.4	22	1.55	15.2	
7	7	1986	D1	HAR	nil	38.	193	217.7	22	43.	23.4	22	1.47	11.1	
7	7	1986	D2	HAR	nil	40.1	219	230.	22	30.5	23.2	22	0.93	20.2	
7	7	1986	D3	HAR	nil	75.6	211	330.	22	53.7	25.3	22	1.37	4.7	

Table 5. Fish/Shrimp Stocking, Sampling, and Harvesting. Ayutthaya, Thailand, Cycle III, Wet Season

DAY	MONTH	YEAR	POND	ACTIVITY	SPECIES	POP. WEIGHT	POP. NUMBER	SAMPLE WEIGHT	SAMPLE WT.-#	SAMPLE WT.-SD	SAMPLE LENGTH	SAMPLE LT.-#	SAMPLE LT.-SD	REPROD. WEIGHT	REPROD. NUMBER
6	11	1986	D1	SAM	nil			212.	22	38.5	22.3	22	1.03	8.	
6	11	1986	D2	SAM	nil			182.	22	30.1	20.7	22	0.87	2.5	
6	11	1986	D3	SAM	nil			238.	22	34.7	23.	22	1.1		
8	12	1986	A1	SAM	nil			127.	22	27.3	18.3	22	1.27	0.6	
8	12	1986	A2	SAM	nil			132.	22	24.2	18.8	22	1.1	2.	
8	12	1986	A3	SAM	nil			212.	22	28.5	22.6	22	1.15	2.	
8	12	1986	B1	SAM	nil			231.	22	43.3	22.6	22	1.17	0.25	
8	12	1986	B2	SAM	nil			150.	22	25.6	20.1	22	1.32	0.8	
8	12	1986	B3	SAM	nil			234.	22	47.	23.	22	1.92		
8	12	1986	C1	SAM	nil			192.	22	34.1	21.4	22	1.13	4.6	
8	12	1986	C2	SAM	nil			168.	22	26.5	20.1	22	0.94	0.2	
8	12	1986	C3	SAM	nil			169.	22	24.9	20.9	22	1.21	0.5	
8	12	1986	D1	SAM	nil			224.	22	30.6	22.8	22	0.97	4.3	
8	12	1986	D2	SAM	nil			198.	22	40.7	21.8	22	1.52	3.	
8	12	1986	D3	SAM	nil			292.	22	45.	25.	22	1.6	0.17	
29	12	1986	A1	HAR	nil	22.6	190	131.	22	25.3	19.2	22	1.54	0.06	
29	12	1986	A2	HAR	nil	29.65	216	158.	22	21.8	20.5	22	0.88	2.	
29	12	1986	A3	HAR	nil	43.	199	232.	22	35.2	23.9	22	1.19	1.6	
29	12	1986	B1	HAR	nil	44.15	193	267.	22	49.9	24.2	22	1.22	0.56	
29	12	1986	B2	HAR	nil	43.05	211	181.	22	25.1	21.6	22	0.98	2.2	
29	12	1986	B3	HAR	nil	41.37	179	250.	22	57.4	23.9	22	1.71	0.2	
29	12	1986	C1	HAR	nil	30.34	189	198.	22	24.2	22.2	22	0.82	4.	
29	12	1986	C2	HAR	nil	39.19	209	191.	22	28.8	21.8	22	1.08	5.4	
29	12	1986	C3	HAR	nil	29.42	195	175.	22	21.6	20.8	22	0.72	6.7	
29	12	1986	D1	HAR	nil	37.93	191	212.	22	28.1	23.3	22	1.14	5.45	
29	12	1986	D2	HAR	nil	39.98	201	230.	22	34.2	22.8	22	1.21	13.2	
29	12	1986	D3	HAR	nil	58.82	209	299.	22	37.1	26.	22	1.2		

Table 6. Plankton and Benthos. Ayutthaya, Thailand, Cycle III, Wet Season

				NET					NET
DAY	MONTH	YEAR	POND#	PRODUCTN	DAY	MONTH	YEAR	POND#	PRODUCTN
7	11	1986	B3	4806.	4	12	1986	B1	4974.
7	11	1986	C1	12145.	4	12	1986	B2	1927.
7	11	1986	C2	11091.	4	12	1986	B3	2420.
7	11	1986	C3	10537.	4	12	1986	C1	3764.
7	11	1986	D1	13402.	4	12	1986	C2	2554.
7	11	1986	D2	13587.	4	12	1986	C3	1075.
7	11	1986	D3	15288.	4	12	1986	D1	2599.
14	11	1986	A1	8348.	4	12	1986	D2	2599.
14	11	1986	A2	9951.	4	12	1986	D3	3029.
14	11	1986	A3	9108.	12	12	1986	A1	9820.
14	11	1986	B1	11216.	12	12	1986	A2	12872.
14	11	1986	B2	3963.	12	12	1986	A3	13191.
14	11	1986	B3	5819.	12	12	1986	B1	24418.
14	11	1986	C1	11637.	12	12	1986	B2	9608.
14	11	1986	C2	8939.	12	12	1986	B3	20569.
14	11	1986	C3	9782.	12	12	1986	C1	17915.
14	11	1986	D1	17202.	12	12	1986	C2	13324.
14	11	1986	D2	12312.	12	12	1986	C3	7617.
14	11	1986	D3	12464.	12	12	1986	D1	15527.
21	11	1986	A1	11033.	12	12	1986	D2	11811.
21	11	1986	A2	11140.	12	12	1986	D3	16854.
21	11	1986	A3	10069.	19	12	1986	A1	7053.
21	11	1986	B1	10711.	19	12	1986	A2	9371.
21	11	1986	B2	7819.	19	12	1986	A3	6953.
21	11	1986	B3	9255.	19	12	1986	B1	21966.
21	11	1986	C1	12147.	19	12	1986	B2	9875.
21	11	1986	C2	8933.	19	12	1986	B3	17935.
21	11	1986	C3	7755.	19	12	1986	C1	14610.
21	11	1986	D1	8355.	19	12	1986	C2	11587.
21	11	1986	D2	9212.	19	12	1986	C3	4030.
21	11	1986	D3	17781.	19	12	1986	D1	8968.
28	11	1986	A1	6315.	19	12	1986	D2	11789.
28	11	1986	A2	13405.	19	12	1986	D3	17532.
28	11	1986	A3	6120.	26	12	1986	A1	5133.
28	11	1986	B1	19787.	26	12	1986	A2	8983.
28	11	1986	B2	5286.	26	12	1986	A3	9881.
28	11	1986	B3	7867.	26	12	1986	B1	22072.
28	11	1986	C1	13542.	26	12	1986	B2	7186.
28	11	1986	C2	7578.	26	12	1986	B3	9496.
28	11	1986	C3	5343.	26	12	1986	C1	9368.
28	11	1986	D1	4528.	26	12	1986	C2	12062.
28	11	1986	D2	8199.	26	12	1986	C3	7443.
28	11	1986	D3	13562.	26	12	1986	D1	11549.
4	12	1986	A1	2465.	26	12	1986	D2	9239.
4	12	1986	A2	3137.	26	12	1986	D3	12704.
4	12	1986	A3	2912.					

Table 9. Pond Morphometrics. Ayutthaya, Thailand, Cycle III

DAY	MONTH	YEAR	POND#	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME	AREA	VOLUME		
				10 CM	10 CH	20 CM	20 CH	30 CM	30 CH	40 CM	40 CH	50 CM	50 CH	60 CM	60 CH	70 CM	70 CH	80 CM	80 CH	90 CM	90 CH
13	3	1986	1	180.	18.	188.	38.	196.	59.	204.	82.	212.	106.	220.	132.	229.	160.	237.	189.	245.	221.
13	3	1986	2	180.	18.	188.	38.	196.	59.	204.	82.	212.	106.	220.	132.	229.	160.	237.	189.	245.	221.
13	3	1986	3	180.	18.	188.	38.	196.	59.	204.	82.	212.	106.	220.	132.	229.	160.	237.	189.	245.	221.
13	3	1986	4	180.	18.	188.	38.	196.	59.	204.	82.	212.	106.	220.	132.	229.	160.	237.	189.	245.	221.
13	3	1986	5	180.	18.	188.	38.	196.	59.	204.	82.	212.	106.	220.	132.	229.	160.	237.	189.	245.	221.
13	3	1986	6	180.	18.	188.	38.	196.	59.	204.	82.	212.	106.	220.	132.	229.	160.	237.	189.	245.	221.
13	3	1986	7	180.	18.	188.	38.	196.	59.	204.	82.	212.	106.	220.	132.	229.	160.	237.	189.	245.	221.
13	3	1986	8	180.	18.	188.	38.	196.	59.	204.	82.	212.	106.	220.	132.	229.	160.	237.	189.	245.	221.
13	3	1986	9	180.	18.	188.	38.	196.	59.	204.	82.	212.	106.	220.	132.	229.	160.	237.	189.	245.	221.
13	3	1986	10	180.	18.	188.	38.	196.	59.	204.	82.	212.	106.	220.	132.	229.	160.	237.	189.	245.	221.
13	3	1986	11	180.	18.	188.	38.	196.	59.	204.	82.	212.	106.	220.	132.	229.	160.	237.	189.	245.	221.
13	3	1986	12	180.	18.	188.	38.	196.	59.	204.	82.	212.	106.	220.	132.	229.	160.	237.	189.	245.	221.

